Fortress



British Fortifications in Zululand 1879

Ian Knight • Illustrated by Adam Hook



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1 inch	2.54 cm
1 foot	0.3048 m
1 yard	0.9144 m
1 mile	1.609 km
1 pound	0.4536 kg
1 ounce	28.3495231 grams

The Fortress Study Group (FSG)

The object of the FSG is to advance the education of the public in the study of all aspects of fortifications and their armaments, especially works constructed to mount or resist artillery. The FSG holds an annual conference in September over a long weekend with visits and evening lectures, an annual tour abroad lasting about eight days, and an annual Members' Day.

The FSG journal *FORT* is published annually, and its newsletter *Casemate* is published three times a year. Membership is international. For further details, please contact:

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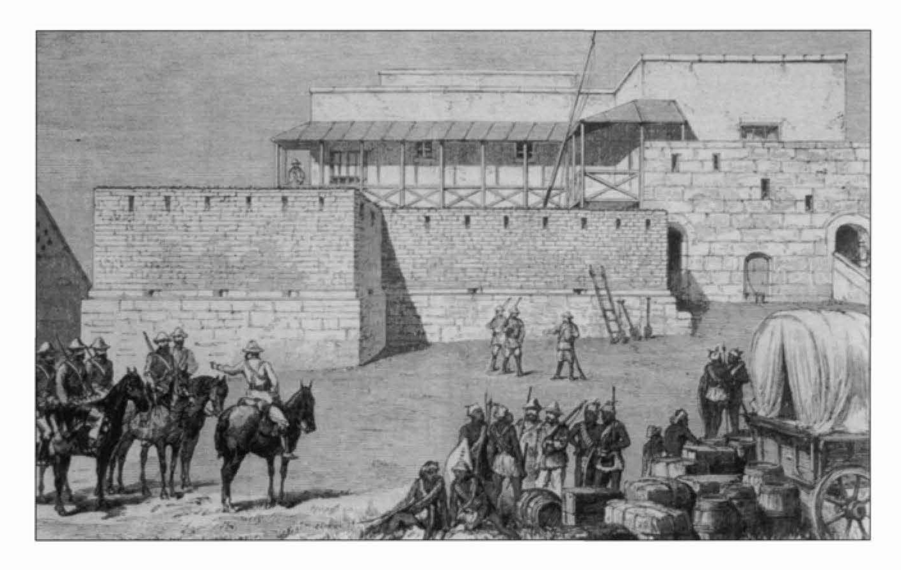
Introduction

The Anglo-Zulu war

On 11 January 1879, the British Empire went to war with the Zulu kingdom of southern Africa. The initiative for the war undoubtedly lay with the British, although those who had manoeuvred a political confrontation and planned the subsequent military intervention had expected the campaign to be short, and the long-term regional benefits to far outweigh the costs. In fact, however, Zulu resistance proved remarkably strong, and the war was to become Britain's bloodiest entanglement in southern Africa up to that time. The long-term consequences were, moreover, disastrous for both sides, resulting in abrupt changes of British policy – which in turn sowed the seeds for future conflict – and in the progressive destruction of the Zulu kingdom and to the dispossession of the Zulu people.

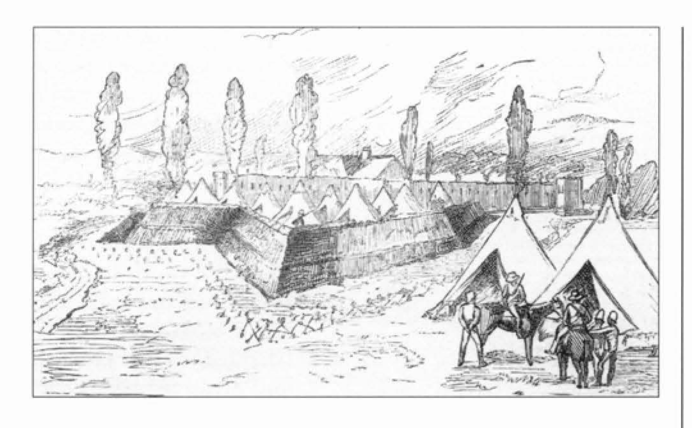
The Zulu kingdom had emerged on the eastern seaboard of southern Africa – between the Kahlamba (Drakensberg) mountains and the Indian Ocean – early in the 19th century, on the very eve of European penetration of the area. Britain had come to the Cape in 1806, seizing the long-established Dutch port at Cape Town to secure the maritime route around Africa to the Indies as part of the global war on Napoleon. Initially Britain had no interest in the hinterland, but successive waves of settler emigration from the Cape Colony dragged British authority in their wake and led to a series of conflicts with indigenous African groups. As early as 1824, rumours of the power and wealth of the new Zulu kingdom had lured British adventurers to establish a trading settlement – known optimistically as Port Natal, modern Durban – on the Zulu periphery. By the 1840s Britain had extended formal control inland from the port. Known as Natal, this area directly abutted the Zulu kingdom to the south.

For 30 years, Anglo-Zulu relations were amicable enough, but in the 1870s the British adopted a more aggressive policy in southern Africa based on a new Imperial economic vision stimulated by the discovery of diamonds at Kimberly in 1868. In 1877 Sir Henry Bartle Frere was sent to the Cape to consolidate British claims across the area. Quickly, Frere came to see the Zulu kingdom – the most militarily robust and economically independent black African group south of the Limpopo River – as a threat to British interests. In late 1878 he



Most defensive structures erected by the Natal administration for the protection of the white settler community – generally known as laagers – consisted of simple oblong forts made from dry stone with one or more projecting bastions to provide flanking fire, and sometimes incorporating civilian buildings. This contemporary illustration of the laager in the village of Verulam, north of Durban, suggests that it was a particularly impressive structure two storeys high.

manipulated border tensions to engineer a rift with the Zulu king, Cetshwayo kaMpande, and in late 1878 presented an ultimatum. This demanded, among other things, that the Zulu disband their army and accept a British resident at the Zulu capital. The Zulu made no reply, and war began.



The difference in architecture between colonial and military fortifications is neatly summed up in this sketch of the defences at Greytown, close to the middle Zululand border. The stone civilian laager is visible close to the buildings, with the adjoining military earthwork in the foreground. Note the wire entanglements outside the trenches.

As was often the case in Victorian colonial wars, the commander in the field, Lt. Gen. Lord Chelmsford, was faced with a task for which he knew he had too few resources. In order to fulfil Frere's political objective – to break up the Zulu kingdom – Chelmsford was required to invade Zululand with just 5,000 regular British infantry and 20 field guns at his disposal. By his own intelligence assessments, the Zulu could muster as many as 40,000[1] men who were well-motivated, carried firearms as well as traditional weapons, and were, moreover, unhindered by supply trains and were capable of moving through the African landscape far more quickly than their British counterparts. It required the addition to Chelmsford's forces of small volunteer units, raised from the white settler population, and of several hastily raised regiments of African auxiliaries, to make Chelmsford's army viable at all.

Lord Chelmsford's initial plan was to invade Zululand from five separate points along the borders. Traditionally, the main entry point into the kingdom was by a well-established traders' road that ran up the coast from Durban, and crossed into Zululand at the Lower Thukela Drift, not far from the river's mouth. A further network of tracks of varying degrees of reliability connected the metropolitan centres of Natal with the Transvaal Republic inland, and one, which ran via Greytown north through the hamlet of Dundee, branched off at Helpmekaar to strike the border at Rorke's Drift. A more established road, known as the Jagter's Pad or 'hunters' road', skirted the Kahlamba foothills and passed north through the area disputed by the Zulus and the Transvaal. All three routes afforded opportunities to amass troops on the borders, although the coastal road allowed the quickest access to the front to troops arriving by sea. To plug the wide gaps between, Chelmsford intended to move a small force south through the Transvaal, skirting the western border of Swaziland, and into Zululand from the north, and to send another through the steep and spectacular Thukela valley at Middle Drift, between Rorke's and the Lower drifts. The columns were to converge on the cluster of royal settlements at oNdini (Ulundi), which constituted the Zulu capital, but in the event a shortage of transport forced Chelmsford to reduce the offensive columns to three, with the Transvaal and Middle Drift columns given a supporting role.

The war went badly for the British from the first. All three invading columns were met by a concerted Zulu response between 22 and 24 January. At Nyezane, on the coast, Col. C.K. Pearson's right-flank column brushed aside local Zulu forces and advanced to occupy his first strategic objective, the deserted mission station at Eshowe. Similarly, in the north, Col. H.E. Wood's left-flank column dispersed local Zulu concentrations around the Zungwini and Hlobane mountains. The heaviest Zulu response, however, was reserved for the centre column, under Chelmsford's personal command. On 22 January the main Zulu army, 25,000 strong, caught Chelmsford's column divided, and obliterated his camp at Isandlwana, killing over 1,300 of the 1,700 defenders. In the aftermath of that attack, some 3,500 Zulu reserves crossed the Mzinyathi (Buffalo) River into Natal and attacked the border post at Rorke's Drift, but were repulsed after ten hours of close-quarter fighting.

[1] In fact, no single Zulu army in the field numbered more than 25,000 men in 1879 because the army was deployed on several fronts.

The reverse at Isandlwana effectively destroyed Chelmsford's invasion plan. The remnants of his centre column fell back on Rorke's Drift, leaving the flanking columns unsupported. At Eshowe, Col. Pearson decided to dig in around the mission buildings, and Zulu forces soon cut off his line of retreat. Only the northern column remained active, raiding local Zulu settlements. For three months, the Natal/Zulu border was open to a Zulu counter-attack. Yet the string of battles in January had exhausted the Zulu army, and the men had dispersed to recover. King Cetshwayo had neither the will nor the ability to carry the war into Natal, and by his inertia in those crucial weeks he allowed the British to regain the initiative. Shocked by news of the disaster, the British Government hurried reinforcements to southern Africa. By March Lord Chelmsford was preparing to go onto the offensive, and the war entered a new and decisive phase.

King Cetshwayo, well aware of the British build up, re-assembled his army in the hope of striking first. Sent north, to attack Wood's column, it caught Wood's mounted detachments isolated at Hlobane mountain on 28 March, and routed them; the following day, however, the same regiments who had triumphed at Isandlwana attacked Wood's column at Khambula, and were decisively defeated.

At the same time, Chelmsford had assembled a new column, composed of reinforcements, and had crossed into southern Zululand to relieve Pearson at Eshowe. On 2 April he broke through the Zulu cordon at kwaGingindlovu, and the following day Eshowe was relieved.

The twin defeats at either end of the country within days of each other had seriously damaged the Zulu capacity to resist the British invasion. Over the following weeks, Chelmsford reorganised his forces again, and on 1 June mounted a new offensive, striking into Zululand along two fronts. One column – the 1st Division – advanced up the coast, suppressing local resistance, while a new column – the 2nd Division – advanced in tandem with Wood's old column from the north. After a slow and careful advance, Chelmsford reached oNdini at the beginning of July, and on the 4th inflicted a final defeat on the Zulu forces there. The great royal homesteads were put to the torch, and King Cetshwayo fled, only to be captured at the end of August by British Dragoons. Minor skirmishes continued until news of the king's capture had spread throughout Zululand, but by September, the Anglo-Zulu War was over.



The interior of Fort Pine today – the most impressive border post along the Mzinyathi River, intended as a barracks for the Natal Mounted Police. The outlying walls and interior barracks – shown here – were all built from local stone.

Chronology

1878	
11 December	Ultimatum delivered to Zulu representatives.
1879	
6 January	British No.4 Column crosses the River Ncome into Zululand.
11 January	The British ultimatum expires. No. 3 Column crosses into Zululand at Rorke's Drift.
12 January	No. 1 Column begins to cross into Zululand at Lower Thukela. No. 3 Column attacks Sihayo's stronghold.
17 January	Main Zulu army leaves Ulundi to attack No. 3 Column.
18 January	No. 1 Column begins advance on Eshowe.
20 January	No. 4 Column establishes base at Fort Thinta. No. 3 Column arrives at Isandlwana.
22 January	The Battle of Nyezane; No. 1 Column defeats 6,000 Zulus in battle. The Battle of Isandlwana; the British are soundly defeated.
22/23 January	The Battle of Rorke's Drift.
24 January	No. 4 Column receives the first news of Isandlwana.
27 January	No. 1 Column receives news of Isandlwana.
28 January	No. 1 Column decides to hold Eshowe.
31 January	No. 4 Column moves camp to Khambula Hill.
11 February	Chelmsford's despatch detailing the defeat at Isandlwana reaches London. Communications with Eshowe are cut.
3 March	Heliograph communication is opened between Thukela and Eshowe.
11 March	The first reinforcements authorised by UK government.
12 March	Attack on the 80th Regimental convoy at Ntombe River.
28 March	Battle of Hlobane; mounted troops of No. 4 Column are defeated.
29 March	The Eshowe Relief Column advances. The Battle of Khambula.
1 April	Prince Imperial of France arrives in Natal to join Lord Chelmsford's staff.
2 April	The Battle of Gingindlovu. The Eshowe Relief Column defeats a large Zulu army.
3 April	Eshowe is relieved.
11 April	The last of Chelmsford's reinforcements arrive.
13 April	Chelmsford reorganises his forces into 1st Division, 2nd Division and Flying Column.
21 May	A reconnaissance force moves to Isandlwana. Bodies are buried and wagons are removed.
31 May	The 2nd Division crosses into Zululand.
1 June	Prince Imperial is killed in an ambush while on patrol.
16 June	Chelmsford receives news that he is to be superseded by Sir Garnet Wolseley.
17 June	The Flying Column and 2nd Division link up for an advance on Ulundi.
20 June	1st Division advances from its depots in southern Zululand.
27 June	Combined 2nd Division and Flying Column arrive at Mthonjaneni heights for a final march on Ulundi.
28 June	Sir Garnet Wolseley arrives in Durban.
1 July	2nd Division and Flying Column camp on the White Mfolozi River.
4 July	Battle of Ulundi; the final defeat for the Zulu army.
8 July	Chelmsford resigns his command.
15 July	Chelmsford hands over to Wolseley.
28 August	King Cetshwayo is captured.

The role of fortifications during the Anglo-Zulu war

Both Lord Chelmsford and his Zulu counterparts had originally conceived the war as one of manoeuvre. The British had believed initially that the Zulu would not be capable of concerted resistance, and Frere's political vision required them to be quickly subjugated in order to facilitate the imposition of his regional policies. The Zulu, conversely, could not sustain their armies in the field for more than a few weeks at a time, and needed to conclude the fighting so that the men could be released to their civilian responsibilities. At the outset, therefore, the British paid little attention to the need for fortifications, believing that they were unnecessary, too labour-intensive, and too time-consuming. The one exception was in the area of civilian defence, where fortifications were provided along the Zulu borders for the protection of the white settler community, in case the Zulu mounted a counter-attack. Natal's black African population was largely expected to fend for itself in that event.

The events at Isandlwana changed this perspective. The complete absence of any defensive works to protect the camp at Isandlwana was a conspicuous element in the British defeat, while the Zulu inability to overcome even the hasty defences erected at Rorke's Drift made the advantages of such works obvious. At Eshowe, Col. Pearson's enforced isolation led to the construction of a fort that was largely impregnable to Zulu attack. During the March battles, both Khambula and to a lesser extent the camp at kwaGingindlovu were protected by earthworks, and the Zulu proved unable to penetrate them. During the advance on oNdini in the final stages of the war, it became as commonplace to erect fortifications – small though they often were – to protect the line of march and supply depots as it had been unusual at the beginning of the war.

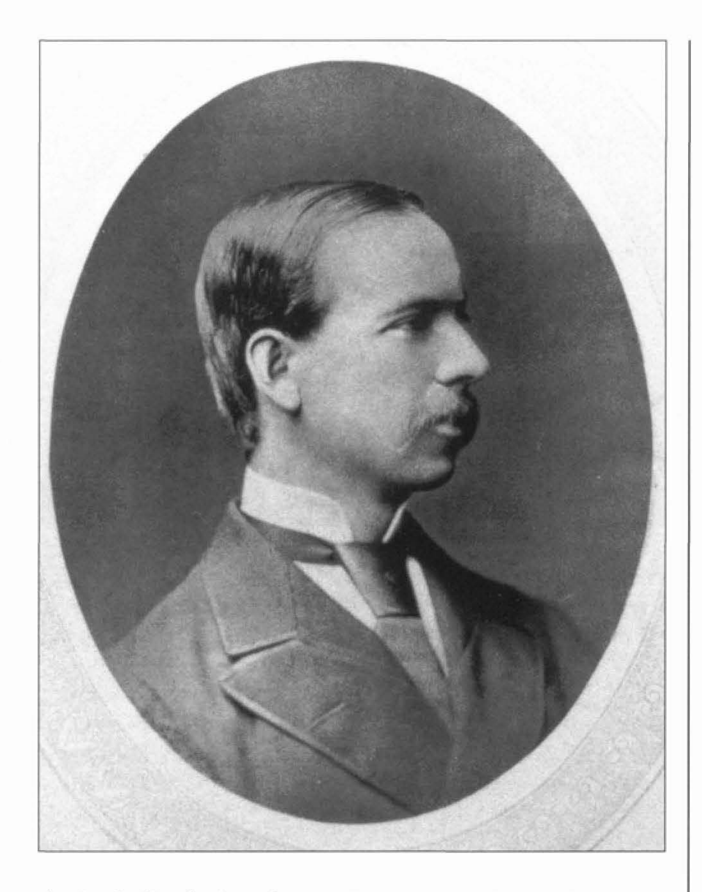
In the final analysis, although British fortifications in Zululand in 1879 were often physically small and unglamorous, and their role historically has often been overlooked, their contribution to the British war effort was immense. Not only did they provide a very real counter to the Zulu advantages in numbers and mobility, but they offered a telling sense of psychological security which ultimately shaped British tactics, and shifted the balance of power in the field decisively in Lord Chelmsford's favour.

The British Army and military fortification in the 1870s

During the second half of the 19th century, the art of fortification had made huge progress among the world powers. Since the advent of gunpowder had rendered medieval fortresses largely obsolete, the drive had been to develop a system which would protect positions against increasingly sophisticated forms of artillery bombardment. High ramparts of stone had given way to low angular bastions, planned with scientific precision to minimise blast damage, and which were protected from infantry attacks by complex screens of entrenchments and ramparts. Such systems were perfected by the French military engineer, Sebastien de Vauban (1633–1707) whose genius continued to dominate military thought throughout the 19th century, and whose principles were adapted by later generations to the requirements forced upon them by ever-more

sophisticated artillery systems. And the 19th century provided many telling examples of the importance of the military engineer's art, from the complex works outside Paris to the trenches and bomb-proof shelters constructed to protect the Turkish garrison at Plevna from the attacking Russians. In America, the Civil War offered grim lessons for the future as the early war of manoeuvre gradually gave way to the protracted sieges of the strategically important towns of the south.

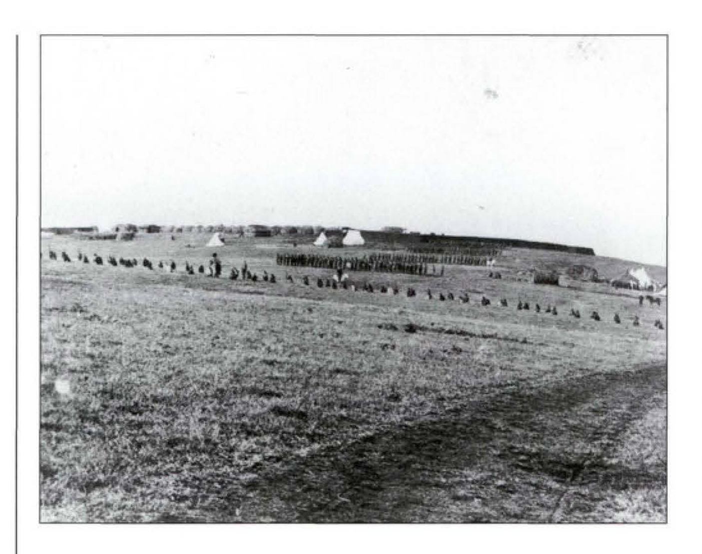
In the 1870s, the British Army was one of the most experienced in the world. Indeed its record was unique in the sheer quantity of campaigning necessary to protect an expanding empire, and in the variety of terrain in which it fought, and the troop types it engaged. Yet, curiously, it is arguably the case that the British Army lagged behind some of the other powers in terms of the practical application of military engineering techniques. Between 1839 and 1900, Britain fought only one major European-style war – that against Russia in the Crimea. Siegecraft had played a major role in that war, as the Russians had dug in around the port of Sebastopol, forcing Britain and her allies to invest it. The allies had, however, singularly failed to penetrate the Russian works, and indeed the major battles of the war had been decided in the open, for the most part away from the Russian lines. There had been fighting around defensive works in India during the Mutiny, too, but the scope to employ siege techniques had remained limited. In New Zealand, in successive wars against the Maoris in the 1840s and 1860s, the British had been required to develop responses to Maori fortification systems, but the contest had been small compared to the greater conflicts waged by armies in Europe. In the major campaigns at the end of the 19th century – in the Sudan and in South Africa – the role of field engineering had been important but minor. In all this wealth of campaign experience, there was nothing among the British by 1879 to compare with the titanic struggles for Plevna or Petersburg.



Captain Warren Richard Colvin Wynne, No. 2 Company, Royal Engineers, who, as senior Engineer attached to Col. Pearson's coastal column, was responsible for the design of Fort Tenedos and the fort at Eshowe – the largest work constructed during the war.

The Royal Engineers

Responsibility for building and destroying fortifications in the British Army – together with surveying, road building, demolition, ballooning, military railways and even photography – fell to the Corps of Royal Engineers. By the 1870s, the importance of a level of professional competence, of theoretical and technical expertise, was first becoming appreciated within the British Army, which had hitherto relied upon a belief in the inherited ability to command, and upon amateur enthusiasm. The officers of the Royal Engineers were among the most professional and highly trained in the Army, being graduates of the Royal Military Academy in Woolwich. This institution trained officers for the technical services – the Engineers and Artillery – and demanded a high standard of proficiency in mathematics, gunnery, engineering, fortification and bridging, as well as the essential art of landscape sketching and some understanding of geology and mineralogy. Their duties were not, however, confined to a supporting role, and Engineer officers often found themselves commanding troops in action throughout the Victorian period. Indeed, many distinguished Victorian commanders were Engineers, from Lord Napier of



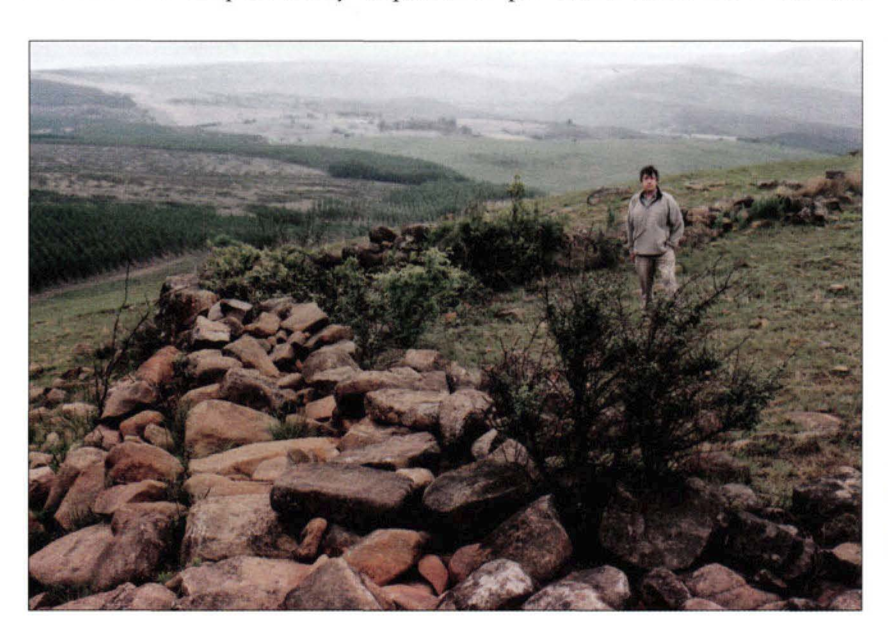
The fort at Thing's Post, one of a number of forts built along the exposed Natal/Zulu borders. The fort itself consisted of an earthwork (visible on the skyline); it was garrisoned by members of the Border Guard, and African auxiliary unit shown here lined up in companies and screened by skirmishers. Note the men's huts outside the fort to the left.

Magdala to Kitchener of Khartoum. One of Lord Chelmsford's appointed column commanders in Zululand, Bvt. Col. Anthony Durnford – who would die at Isandlwana – was an Engineer. So too was Lt. Chard, the senior officer at Rorke's Drift.

The standard field unit for the Royal Engineers in the 1870s was the Company, which at full strength consisted of six officers (a Major, Captain, three Lieutenants and a Surgeon), 21 NCOs (Sergeants, Corporals and 2nd Corporals) and 173 Other Ranks (Drivers, Sappers, Buglers and Batmen). The Sappers were trained in specialist duties, including masonry, carpentry, bricklaying, and as wheelwrights, miners and smiths. An ideal company was expected to be able to provide the complete range of technical skills necessary to support the active elements of a force in the field.

Inevitably, however, Lord Chelmsford was forced to undertake the invasion of Zululand with too few Engineers at his disposal. Indeed, two companies despatched from England in late 1878 – No. 2 Company under Captain Warren Wynne and No. 5 Company under Captain Walter Jones – as a result of Chelmsford's last-minute request for reinforcements constituted, apart from a handful of officers already in southern Africa, his only regular Engineer complement. Both companies arrived at Durban on the transport *Walmer Castle* on 4 January 1879, just a week before the war began. Both were under-strength, and while Wynne's company was attached to Pearson's Coastal Column, and arrived at the Zulu border on 12 January – the day after the British ultimatum expired – only a small advance party from Jones' company had reached the Centre Column at Rorke's Drift by the 17th.

In an attempt to make good something of this critical deficiency, Chelmsford had requested the formation of a unit of Natal Native Pioneers from among the African auxiliary units being raised by the Natal colonial authorities. In all three companies were raised under European commanders, their strength varying between 80 and 104 men. The African chiefdoms of Natal had been periodically required to provide a labour force for the



The author at Wolf Trap Fort, a small rectangular stone redoubt with a projecting bastion at the corner. It was built on high ground overlooking the Thukela River upstream from Middle Drift by the Ixopo Native Contingent, probably in May 1879.


Civilian 'laagers' and military forts to January 24, 1879
TRANSVAAL
Wakkerstroom
Fort Clery
Luneburg
Luneburg laager
Phongolo
Pivaan laager
Utrecht laager and military fort
Utrecht
Mkhuze
Khambula
Hlobane
Newcastle
Newcastle town laager and military Fort Amiel
WOOD
Fort Thinta
Toll Bosch laager
Mzinyathi (Buffalo)
Doorn Kop
Bemba's Kop
Ncome (Blood)
Koppie Alleen
Black Mfolozi
Landman's Drift
Dundee
White Mfolozi
ZULULAND
Fort Pine
Pieter's laager
Sihayo
CHELMSFORD (GLYN)
Rorke's Drift
Isandlwana
Ulundi
Helpmekaar
Mfolozi
Ladysmith laager
Ladysmith
Mhlatuze
Thukela
Eshowe mission station
Eshowe
DURNFORD (to Rorke's Drift)
Strydpoort laager
Fort Durnford (includes Estcourt laager)
Estcourt
Bester's laager
Mooi
Greytown laager (and adjoining military Fort Moore)
Greytown
Hermansburg laager
Fort Buckingham
Nyezane
PEARSON
Umvoti laager
Thring's Post
Fort Tenedos
Fort Pearson
Fort Williamson
NATAL
Stanger
Stanger laager
INDIAN OCEAN
N
Mngeni
Williamstown laager
Pietermaritzburg
Pietermaritzburg laager (including British base at Fort Napier)
Verulam
Verulam laager
Richmond laager
New Germany laager
Pinetown laager
Durban
Durban redoubt
Abandoned pre-existing Colonial fortifications
Military forts
Civilian and/or colonial 'laagers' and fortified posts
British movements
0
20 miles
0
25km

Government's road-building programme, and the selection of men for the Pioneers reflected previous experience in that work. The Pioneers were one of the few auxiliary units to receive uniforms – they were given outmoded British uniform jackets and white trousers – and while the NCOs were issued with firearms, the men in the ranks were given shovels and pickaxes.

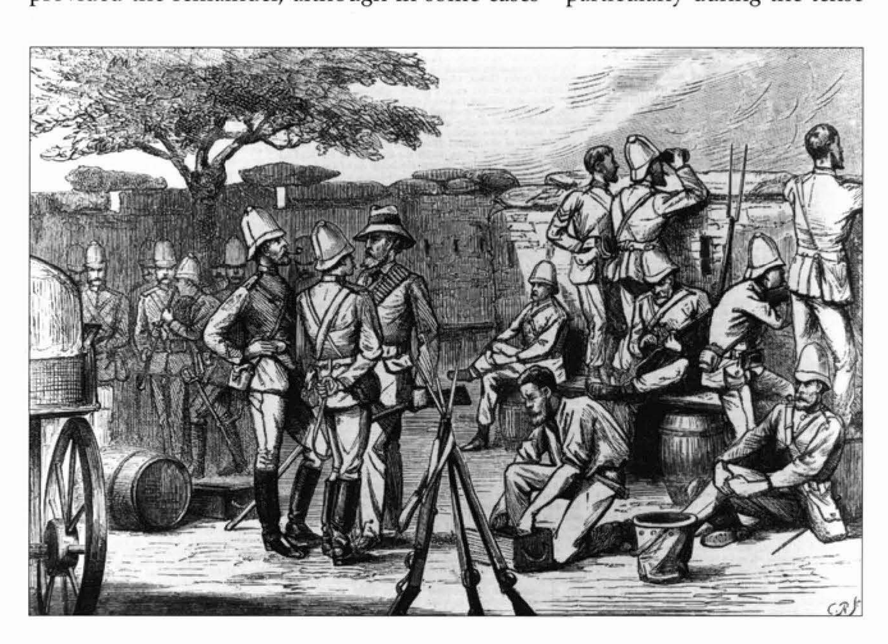
Pre-war fortifications and civilian defences

Colonial society on the eve of the war was characterised by a small ruling settler elite, which was greatly outnumbered by a large African population, most of which still lived a traditional lifestyle, and many of whom had historical connections – often antagonistic – with the Zulu kingdom. Although there had been occasional tension between Natal and Zululand over the years, with resulting fears of Zulu attack, very few provisions had been implemented for the defence of the civilian population, either by means of border defence, or to provide shelter in times of attack.

In 1861, following one invasion scare, a number of forts had been built along the border, notably Fort Buckingham, on the high escarpment near the Middle Drift on the Thukela River, and Fort Williamson, which commanded the best-established route into Zululand at the Lower Thukela Drift. Both forts were relatively simple earthworks, with an inner rampart – probably originally topped with a dry-stone wall – surrounded by a ditch. Neither work was found to be viable on the eve of the Anglo-Zulu War; Fort Buckingham had been abandoned in 1868, and was in ruins a decade later. Fort Williamson was thought still to be useful, but when the first detachments of British troops arrived at the Lower Thukela in November 1878, they preferred to build a new fort nearby, on the bluffs overlooking the river.

Civilian laagers

Fear of attack, either by the Zulu kingdom or from a rising from among Natal's African population, was, however, a feature of the settler psyche, many of whom lived lonely and vulnerable lives on isolated farms, and were all too conscious that they were heavily outnumbered. To protect against such an eventuality, the Natal colonial government had made provision for a number of defensive posts to be built to serve as a refuge for outlying communities. The government generally agreed to pay half the cost of these posts, while the settlers themselves provided the remainder, although in some cases – particularly during the tense



The interior of the civilian laager in Greytown, showing troops watching for Zulu raids and manning the loopholes. In fact, when occupied during alarms the laager was crammed full of civilians, including women and children.

months leading up to the war – local farmers considered these arrangements inadequate, and made their own provisions for defence.

These posts were universally known as 'laagers' from the Afrikaans word, which strictly speaking referred to a defensive circle of wagons, but which had achieved a wider currency representing any place of safety in the face of an African attack. Traditional laagers were formed by encircling the wagons and drawing the transport oxen inside; they could be hastily formed by wagon-trains of settlers on trek, or by farmers in anticipation of an attack, to serve as a rallying point and place of refuge. Sometimes, permanent structures were used as anchoring points for a true laager, and as families trekked in from their farms they would park their wagons in a defensive line around designated buildings. More often, however, the government posts were simple forts, and contained sufficient room for the anticipated number of occupants to draw their wagons inside. The wagons then served as accommodation for the occupants.

These civilian laagers were usually built on a common pattern – an oblong walled enclosure, with square bastions at either end to provide flanking fire along the outside of the walls. The walls themselves were usually made of dry stone, and loopholes were built to allow the defenders to fire through.

By far the most impressive civilian laager was at Estcourt, in the Natal midlands. This had been started in 1874 by the then Major Durnford RE, in response to the 'rebellion' of the amaHlubi people in the nearby Kahlamba foothills. Durnford had built a two-storey stone blockhouse with bastions at either corner. A basement was designed to act as a reservoir, containing water drained from the roof. Windows on each side were protected by iron shutters, which contained loopholes. The main entrance was screened by blinds on the inside to provide cover for the defenders should the doorway be stormed, while a retractable wooden staircase allowed the defenders to isolate themselves on the upper floor. In 1876, three guardhouses and stables had been built close by as a barracks for the Natal Mounted Police, and in 1878 these had been linked to Durnford's blockhouse with a dry stone wall to provide a large rectangular laager. In the event, 'Fort Durnford' was too far from the scene of hostilities in 1879 to be attacked, and indeed its defences were so impressive as to deter any attacker.

On the Natal/Zulu border, only Fort Pine – built on the Biggarsberg ridge above the Mzinyathi River, to serve as a refuge for the frontier farmers between the hamlet of Helpmekaar and the town of Dundee – approached Fort Durnford's ambitions. It followed the same basic design, but was only one storey high, with loopholes instead of windows. Work had begun in 1878, and it was intended to include internal accommodation, but only the outside walls had been completed when war broke out in January 1879. A number of local settlers had occupied the post before the disaster at Isandlwana on the 22nd, which then produced a flood of refugees. Although the interior was crammed with families and their wagons and tents, there were insufficient men to provide an effective defence, and under a very real danger of attack, two small Volunteer units – the Buffalo Border Guard and Newcastle Mounted Rifles – were stationed at the post from 7 February. By May, however, the danger of attack had subsided and most of the settlers had returned home, although the Volunteers remained in residence until July, and the effective end of the war.

Smaller civilian laagers were constructed in or close to the villages along the length of the border throughout the last months of 1878, their precise size and shape dictated by the location and by the number of families they were expected to protect. Indeed, when panic swept through Natal in the aftermath of Isandlwana, even the centres at Durban and Pietermaritzburg were hastily fortified. Key buildings were identified, barricaded and loop-holed, and linked to outlying structures with barricades or wagons. At Durban, a stockade was built across the tip of the Point, one of two jaws of land which frame Durban Bay, to provide a last-ditch refuge for women and children in the event that the town was overrun.

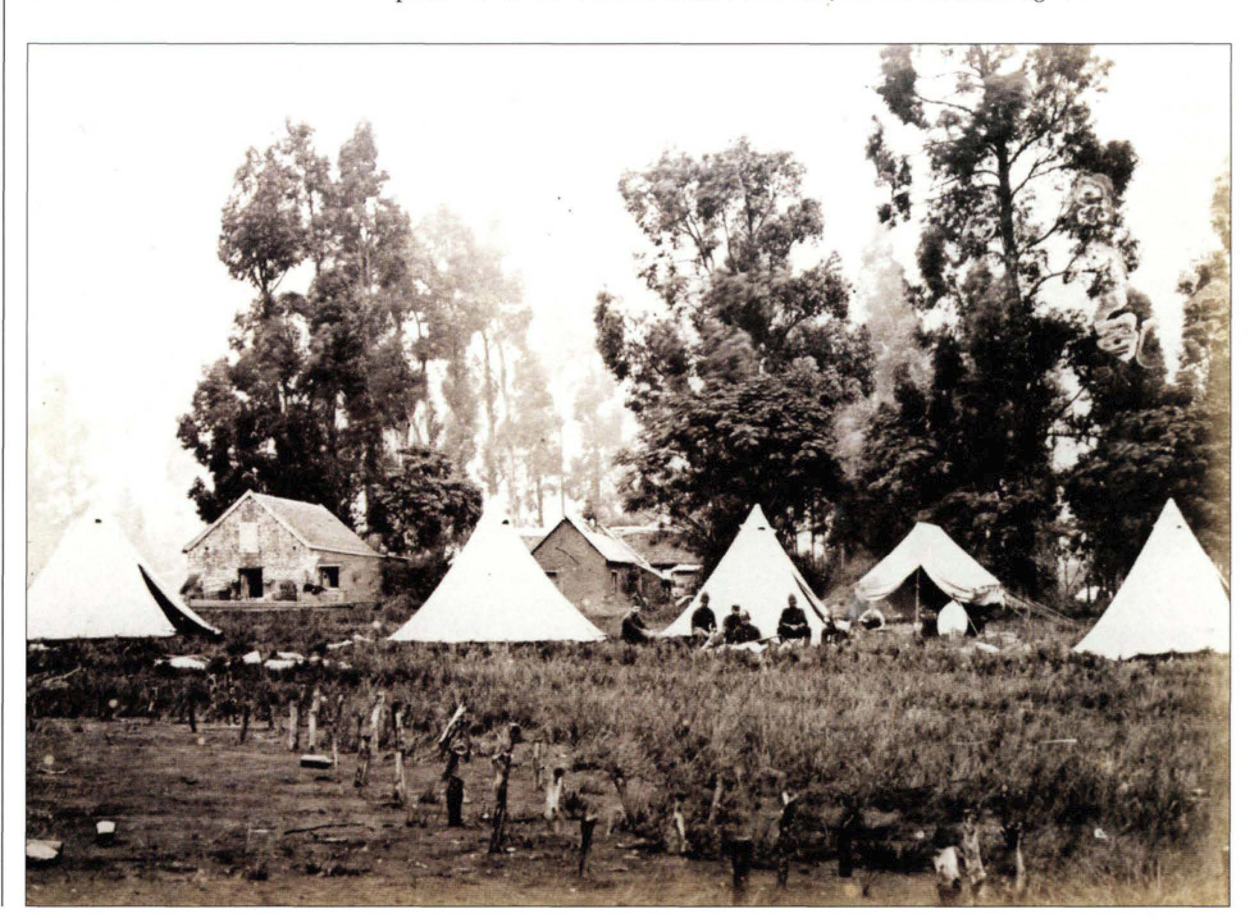
Of course, no large-scale Zulu attack materialised, and indeed none of the civilian laagers, even those situated close to the borders in areas subsequently ravaged by localised Zulu raids, were destined to be attacked. Their defences were never therefore tested, but their contribution to the war should not be overlooked. For a while, in the aftermath of the military failures of late January, they represented Natal's first line of defence, and the fact that they remained unviolated provided the psychological foundation for the British recovery.

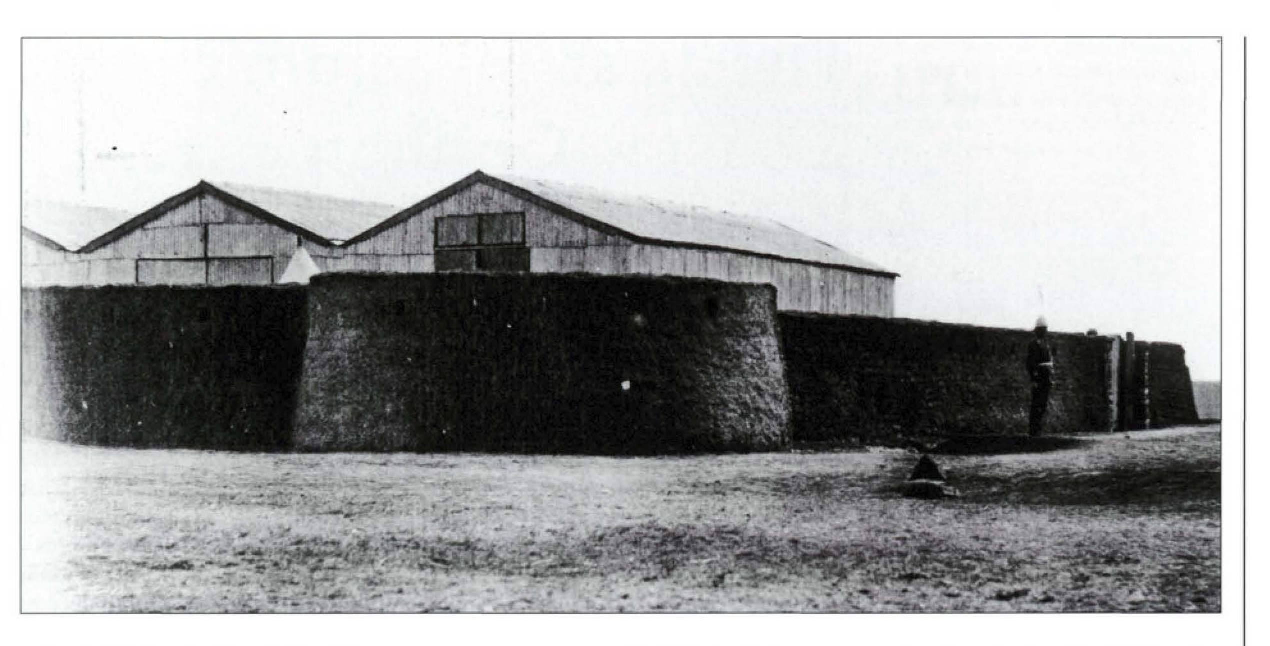
Military fortifications in Zululand

In his Standing Orders, published on the eve of war, Lord Chelmsford specified that all permanent camps constructed in Zulu territory should be at least partially entrenched for their own protection. In the light of subsequent events, this instruction came under considerable scrutiny, but there can be little doubt that in January 1879 Chelmsford saw only a very limited role for fortifications. In this, his attitude was shaped by his experiences on the Eastern Cape Frontier the previous year. Here, he had been faced with suppressing a sporadic outbreak among the amaXhosa people, who preferred to avoid open confrontation, and who waged a guerrilla war from mountain and bush strongholds. Lord Chelmsford had broken Xhosa resistance by establishing protected camps in enemy territory, to act as supply depots and operational bases, and sweeping out from these to contain and destroy the Xhosa armies.

Initially, he undoubtedly expected a similar pattern of warfare in Zululand, and since he hoped for a swift and decisive confrontation, he did not want to be hampered unduly by the need to protect every halt on the march with forts. He anticipated a war of manoeuvre; famously, he once commented that his plan was to 'drive the Zulu into a corner, and make them fight'.

Part of the military camp outside the fortifications at Greytown. The picture is probably taken from between the trench and the wire entanglements; note the cleared glacis, the stakes between which the wire was stretched and the rather half-hearted attempt to litter the approaches with broken glass – several intact bottles are visible on the left.





Fort Jones, built in May 1879 on the outskirts of the town of Dundee to serve as a supply depot for the 2nd Division. The corrugated iron sheds had previously stood at Helpmekaar, and were moved to Dundee when the focus of the war shifted. No trace of Fort Jones now remains; this photograph suggests it was an earthwork with sod walls.

Both Chelmsford and his officers were, moreover, sceptical that a Zulu army had the capability to mount a determined attack on a British position. The Martini-Henry rifle, with which the British infantry were armed, was a robust and accurate breech-loader, and had proved devastating on those rare occasions when the Xhosa had attacked in the open. In order to overrun a position held by even a small number of disciplined and experienced troops – as most of Chelmsford's battalions were in January 1879 – the Zulu would need to mount attacks that were tactically adroit, and would need to withstand the high level of casualties necessary to bring their men to contact. Despite advice to the contrary, Chelmsford believed that they were not capable of either.

Chelmsford's regulations did not, moreover, specify the nature of any entrenchments that were to be constructed. Since the Zulu did not possess artillery, and their firearms were of limited effectiveness, it was not necessary to design the sort of complex structures that were essential in Europe and America. Indeed, the forts merely had to protect the defenders while at the same time providing a physical barrier to slow the Zulu attack long enough to subject it to sufficient small-arms fire. In practice, this usually meant building a square or rectangular work by digging a surrounding ditch and piling the earth up inside to form a rampart. The defenders then lined the rampart, which both protected them from musketry and served to break the impetus of the Zulu charge. In areas where the ground was hard and stony, making digging difficult – which included much of the inland regions of Zululand – it was often sufficient to construct a stout stone wall. Indeed, as Rorke's Drift would prove, the barricades could, in an emergency, be even more basic, for the fact remained that the Zulu were dependent for victory on fighting at close quarters. Any rudimentary barricade which kept them beyond arms' reach allowed the defenders the chance of shooting them down with relative impunity.

Throughout the fluctuations in the fighting, the realisation of this simple fact came to dominate British thinking in the field and to shape a growing reliance on fortifications. Although the breezy over-confidence which prevailed before Isandlwana soon gave way to a more fraught atmosphere which lasted throughout the campaign, the tactical principles that underpinned British fortifications in Zululand remained unchanged, and, with the exception of the fort at Eshowe, the works themselves were never complex by European standards. Even so, the Zulu came to realise early in the war that they had no counter to even the most simplistic British 'strongholds'.

The first invasion: the Coastal Column

The Lower Thukela road – known variously as the Hunters' Road or John Dunn's Road after King Cetshwayo's white adviser whose territory lay on the Zulu bank – consisted of no more than an overgrown wagon track, but it had been the route by which armies and refugees had crossed into and out of the kingdom for a generation. It crossed the river near its mouth, where the narrow gorges up-country had given way to a broad sluggish expanse of water, fordable in all but times of flood, and which passed through one of the few areas of Zululand where the Zulu kings had allowed white missionaries to establish stations. As a result, a number of European buildings – abandoned by their incumbents on the eve of war – lay close to the road.

All these considerations made the route an obvious choice for one of Chelmsford's invading columns, and towards the end of 1878, before even Frere's ultimatum had been presented, the first advance detachments arrived to establish a camp on the Natal bank of the river.

Fort Pearson

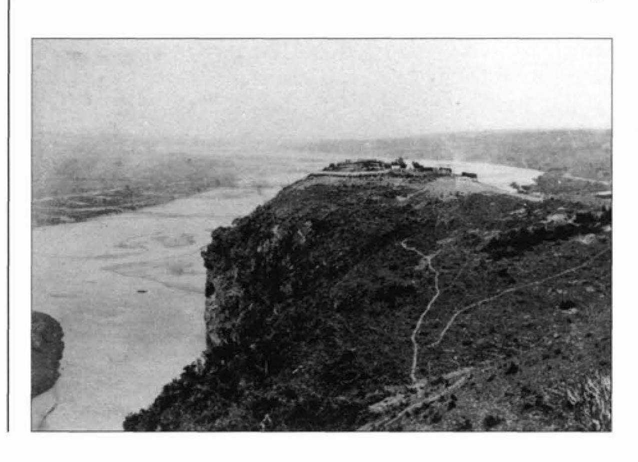
By November several companies of the 3rd Regiment – 'The Buffs' – were in residence. Because of the poor state of the old Fort Williamson a mile downstream, the Buffs decided to occupy a high bluff on the ridges that directly overlooked the drift. With a solitary Engineer officer to advise them – Lt. T. R. Main – they built an earthwork which they called Fort Pearson, after their commanding officer.

Construction of the fort had been completed by December. The Lower Drift was Frere's appointed spot for the fateful meeting with the Zulu representatives on 11 December, when the British ultimatum was presented. The presence of Fort Pearson, and of troops lined up in a show of Imperial might nearby, was intended as a suitably earnest warning to King Cetshwayo that the British meant business.

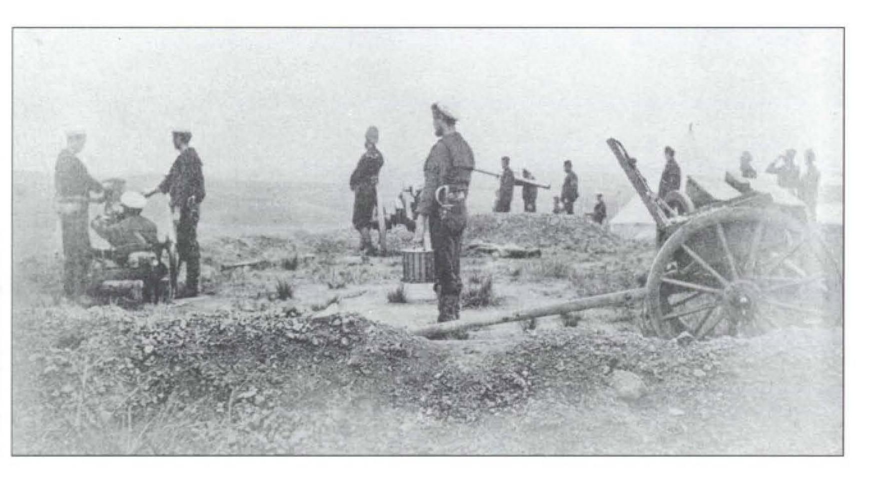
Fort Pearson was to remain the anchor for all British operations in the coastal sector, during both the first and second invasions. The fort itself was particularly simple in design, even by the standards of British works in Zululand. Scarcely 50 yards long and 30 wide, it followed the contours of a knoll in the manner of a Celtic hill fort. The perimeter consisted of two concentric circles of trenches, the earth from the outer trench being piled up on the outside to provide a raised glacis. The earth from the inner trench was

BOTTOM LEFT Fort Pearson, built in December 1878 on a knoll overlooking the Lower Thukela Drift into Zululand – which lies on the left of the photo.

BOTTOM RIGHT The same view of Fort Pearson in the 1990s suggests the commanding geographical features of the position. The trenches are still clearly visible; a motorway bridge was then under construction, spanning the Thukela where a pont had once ferried Pearson's column across the Thukela.







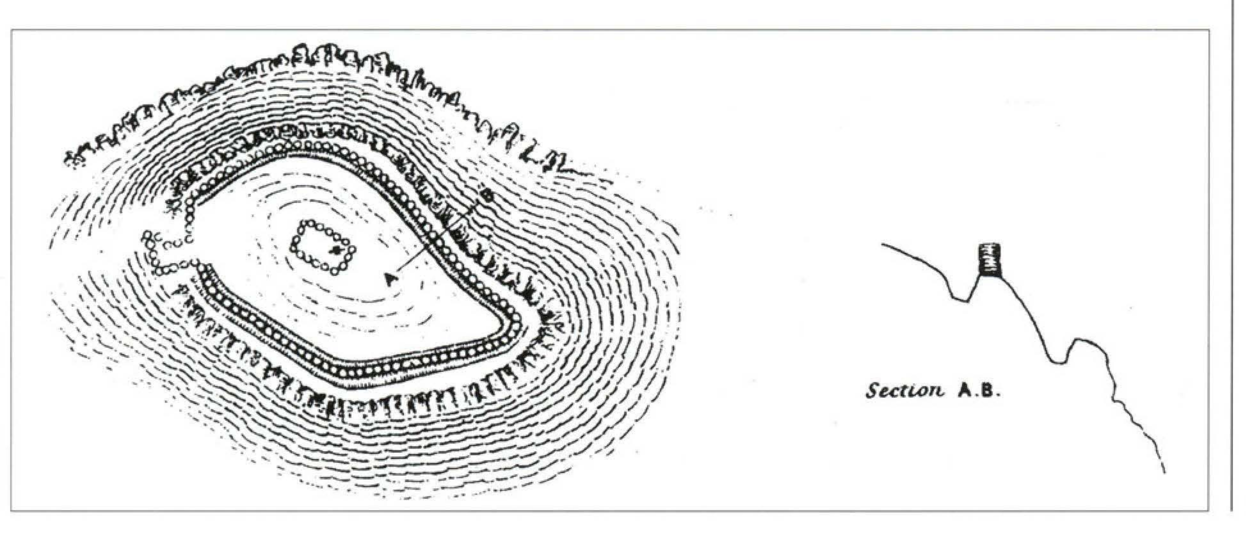
Sailors from HMS *Tenedos* man a Gatling gun (left), 7-pdr gun (right) and rocket trough (centre distance) in the small redoubt on the very top of Fort Pearson in January 1879.

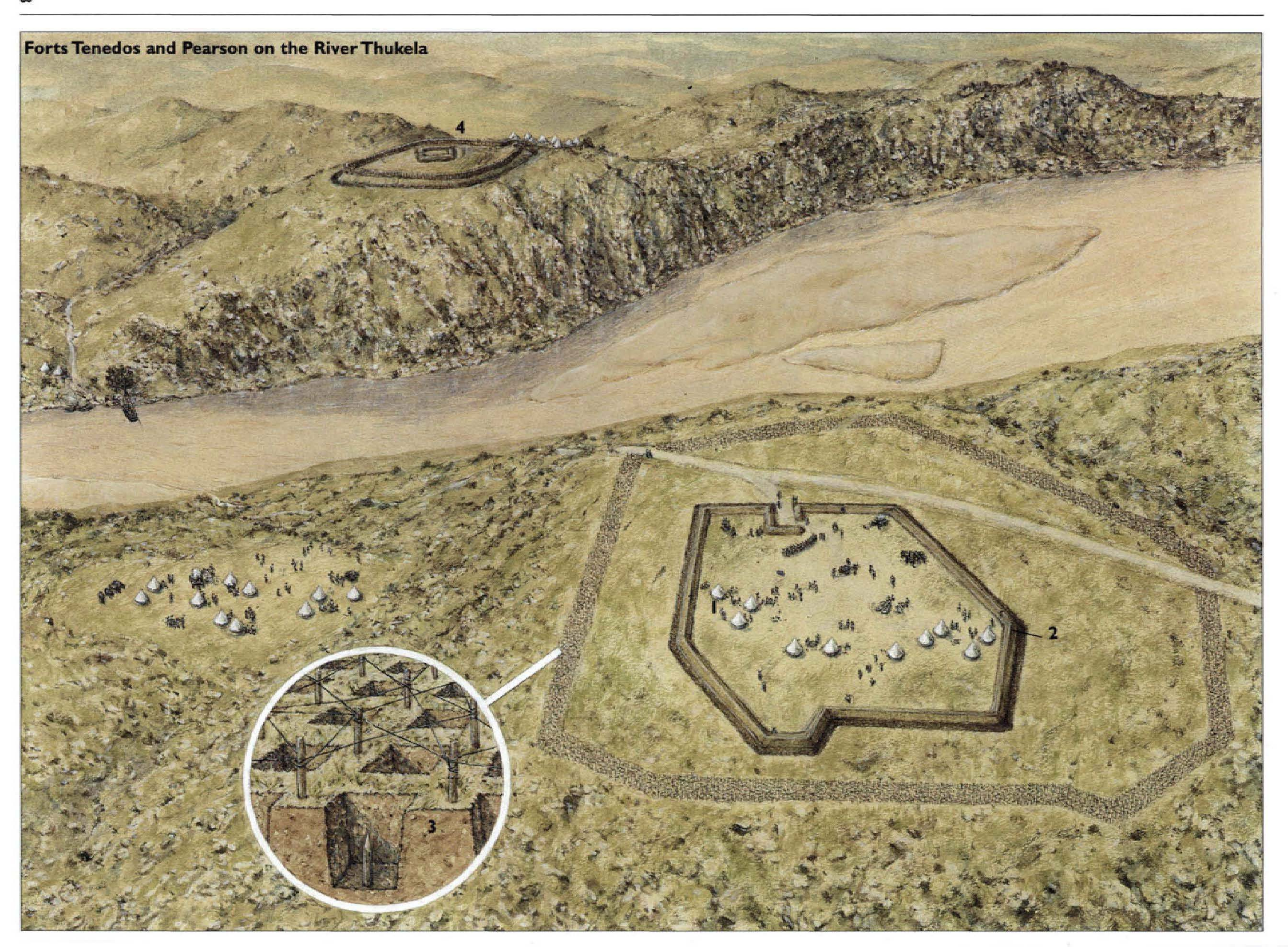
piled up along the line between the two trenches to create a rampart that overlooked both the outer trench and the glacis. A line of gabions – wicker containers packed with earth – were placed along the top of the rampart to provide a formidable obstacle. The entrance was on the southern (Natal) side, and was approached by a path up the steep slope. The entrance itself was screened by a dog-leg of gabions. On the northern side – towards Zululand – the ground fell away for a few yards, then dropped into the river along a sheer cliff face. In the centre of the fort, on the highest point of the knoll, there was a small oblong redoubt, no more than ten yards long, surrounded by a single ditch with a rampart inside. Early in the war, a Naval detachment from HMS *Active* placed a Gatling gun and a 7-pdr field gun in this redoubt, so as to command the river crossing below. Contemporary maps show the inner redoubt topped with gabions, although these do not feature in a photograph taken in January, and they were probably a later addition.

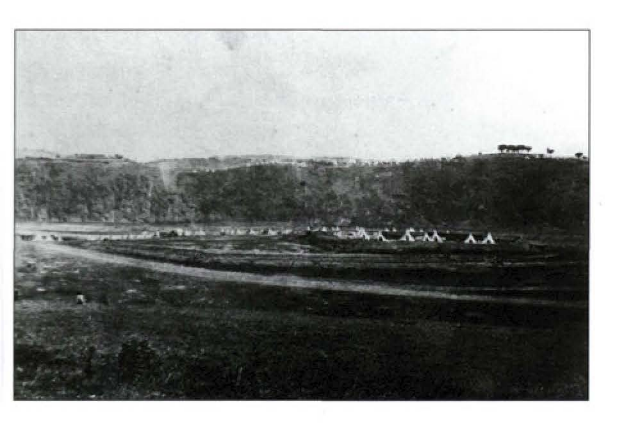
Over the following months, a number of small redoubts were added along the ridge a few hundred yards west of Fort Pearson, to protect the sprawling concentrations of troops and transport which passed through the area as the war progressed. These were more regular in shape than Fort Pearson, and consisted of square or oblong earthworks, again comprising an outer trench with the earth piled up inside to form ramparts.

On 12 January Captain Wynne's No. 2 Company RE arrived at the Drift, fresh out from England. Pearson's column was now in the position – unique among the invading columns – of having a complement trained and skilled in

A contemporary plan of Fort Pearson, showing the way in which the trenches followed the contours around the summit of the knoll. These were reinforced with gabions.




Forts Tenedos and Pearson on the River Thukela
4
1
2
3





the art of fortification, and in No. 2 Company's commander it had a conscientious and capable officer. Warren Richard Colvin Wynne was 35 years old, a rather serious, religious family man whose background, like many Victorian officers, lay in the Anglo-Irish 'ascendancy', and who had been gazetted into the Engineers in 1862. Whilst Wynne was destined not to achieve the fame accorded his fellow Engineer Lt. Chard – or, for that matter, the controversy of Col. Durnford – he was undoubtedly responsible for the greatest engineering feats of the war, since he was responsible for two of the largest and most important forts built during the campaign.

TOP LEFT Fort Tenedos, on the Zulu bank, photographed c. June 1879. The outline of Wynne's fort is clearly visible, as are the surrounding lines of wire entanglements and trous-de-loups. The high bluff – also covered in British camps – is across the river, on the Natal side.

ABOVE RIGHT The remains of Fort Tenedos today, viewed from the summit of Fort Pearson. Like many of the forts in the coastal sector, it has suffered from intensive sugar-cane farming.

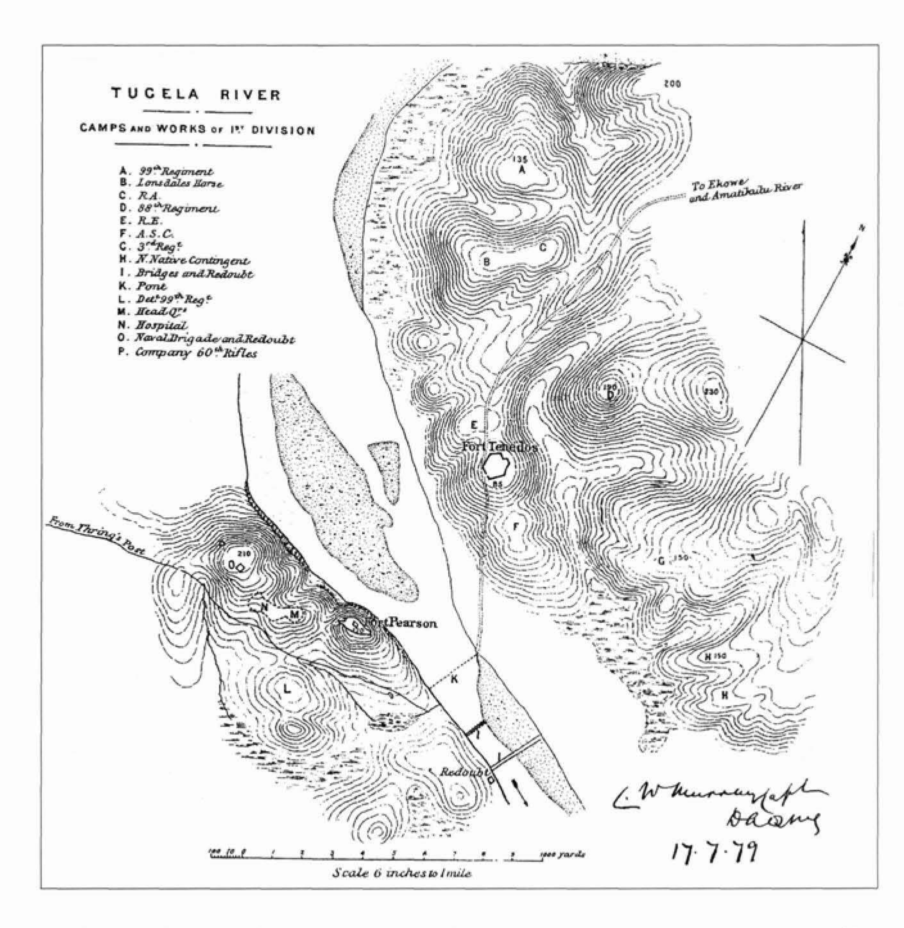
Fort Tenedos

Pearson's column had crossed into Zululand unopposed on 11 January by means of a pont – a flat-bottomed ferry – anchored on either side of the river below Fort Pearson, and had established a large, sprawling camp on the Zulu bank. The Engineers crossed on the 13th, and Pearson instructed Wynne to select a site for a large earthwork, which was to protect the stores that would be accumulated for the coming advance. Wynne spent the following day making his selection – a piece of open ground sloping gently down towards the river, and straddling the track – and on the 15th work began. The subsequent work would be christened Fort Tenedos, after one of the Naval ships that had contributed a landing party to Pearson's command.

Wynne made meticulous notes on the construction of Fort Tenedos, which offer a revealing insight into how such work was completed. For the most part, Wynne and his officers supervised the work, with the Sappers carrying out skilled tasks, and infantrymen providing the labour force. First, the ground was cleared of any bush while the Sappers cut sticks to serve as markers for the shape of the fort, or 'profile'. The sticks were then hammered into the ground up to the height of the ramparts, to guide those building the parapets. The work was carried out in three-hour shifts known as 'reliefs', each relief employing upwards of 100 infantry, who were rotated throughout the day. The reliefs were divided into parties who started work on each face of the fort, so that the outline grew rapidly towards the angles where each wall joined. The labourers were divided into 'diggers', who cut out the outlying trench, and 'shovellers' who piled the

Forts Tenedos and Pearson on the River Thukela
Forts Tenedos and Pearson lay on either side of the River Thukela, and this scene shows them as they appeared in January 1879. Fort Tenedos (**1**) is in the foreground, with tents for living quarters for the naval troops manning it. Its earth ramparts (**2**) are given further protection by a surrounding barrier of 'trous-de-loups' ('wolf pits'), holes about 3ft square and 3ft deep with sharpened stakes at the bottom (**3**). The wire entanglements above these pits were made by driving posts into the ground in consecutive rows, and twisting plain wire between them in a zig-zag pattern. On the other bank of the river lies Fort Pearson (**4**), of a simpler design, with a redoubt in its middle. The steep slopes of the surrounding terrain were well suited to the creation of earth parapets and ditches around the fort.

A map of the forts Pearson and Tenedos complex during the second invasion, when the area served as a base for the 1st Division. The original pont across the river had by then been augmented by a pontoon and footbridge.



earth up behind to form the rampart. It was necessary to supervise the profiles carefully, because a rampart that was too steep would simply collapse, while one that was too shallow would provide no obstacle.

Fort Tenedos was typical in many ways of a design that would become common in Zululand throughout the war. It was broadly hexagonal in shape but the walls were of different lengths, giving the impression that the symmetry was rather 'squashed up'. A small bastion jutted out of the eastern angle, so that it actually had eight walls in all. Overall the position measured roughly 250ft across by 110ft. Each ditch was supposed to be 6ft deep, but in fact layers of rock meant that on some of the faces it only reached to 4ft. The ramparts were shoulder-high, with a banquette – a raised firing step – inside to allow the garrison to fire over them. Where time permitted, the ramparts were to be 'revetted' – supported by lines of stakes or sandbanks to prevent them crumbling. Two raised and revetted gun-platforms were built in the angles facing north-east – towards Zululand. The entrance was on the south-western face, and screened by a dog-leg rampart inside, so that the defenders were protected if they needed to fire at any Zulu forcing the doorway.

By 17 January Pearson had managed to move his baggage train across the river, and the advance into Zululand was scheduled to begin on the 18th. Wynne's company was to march with the column, and despite his best endeavours Fort Tenedos was not quite complete, and some of the revetting had to be left to the garrison designated to remain there, or abandoned altogether. The fort was, however, considered to be in a state ready to receive an attack; it had taken just three days to build but had employed the labour of upwards of 3,000 infantry working in shifts.

The advance began as ordered, and a small garrison was left to hold the fort and protect the supplies that were constantly being carried across the river. Fort

Tenedos enjoys the distinction of being the only true fort built in Zululand in the opening week of the war[2], and under conditions of very real threat. The movements of the Zulu army were not at this point known, and there was a distinct possibility that the fort might be attacked at any time. Indeed, on the night of 25 January, the fort's commander, Lt. Kingscote RN, reported that the fort had come under a heavy fire from Zulus concealed in the darkness. There were no casualties and the shooting ceased after an hour, the Zulus making no attempt to attack.

Fort Tenedos, like Fort Pearson on the Natal bank, remained the anchor for British movements from the Lower Thukela throughout the war, and, again like Fort Pearson, it was subject to continued refinement after Wynne had left. A plan of the fort completed later in the war shows two interior partitions, one consisting of a ditch backed by a row of gabions, and the other a ditch backed with sandbags. These were intended to prevent any enemy fire that passed over the outer walls from raking the interior, or striking the backs of the men defending the ramparts on the far side. Also, a line of obstacles was placed to completely surround the fort at a distance of between 10 and 200 metres. These were intended to disrupt and delay any attack as it approached the ramparts, and hold the attackers at the points where they would suffer most heavily from the defenders' fire. The obstacles themselves consisted of trous-de-loup ('wolf pits') which were made by simply digging rows of holes up to 6ft square and deep, and placing sharpened stakes in the bottom, and wire entanglements. These entanglements were not made of barbed wire, as they might have been a generation later, but were constructed by driving lines of wooden stakes in the ground, and stringing wire zig-zag between them. They were intended to trip the enemy. Although both techniques were essentially medieval in concept, they provided a formidable obstacle against an enemy who went barefoot.

Impressive though it was, Fort Tenedos did not meet everyone's approval, and in February one of Chelmsford's staff officers commented:

> It was very lucky the Zulus did not attack this place ... It is completely open to the fire of a long, strong, stony hill only 300 yards off! And no one seemed to know that danger until we arrived!

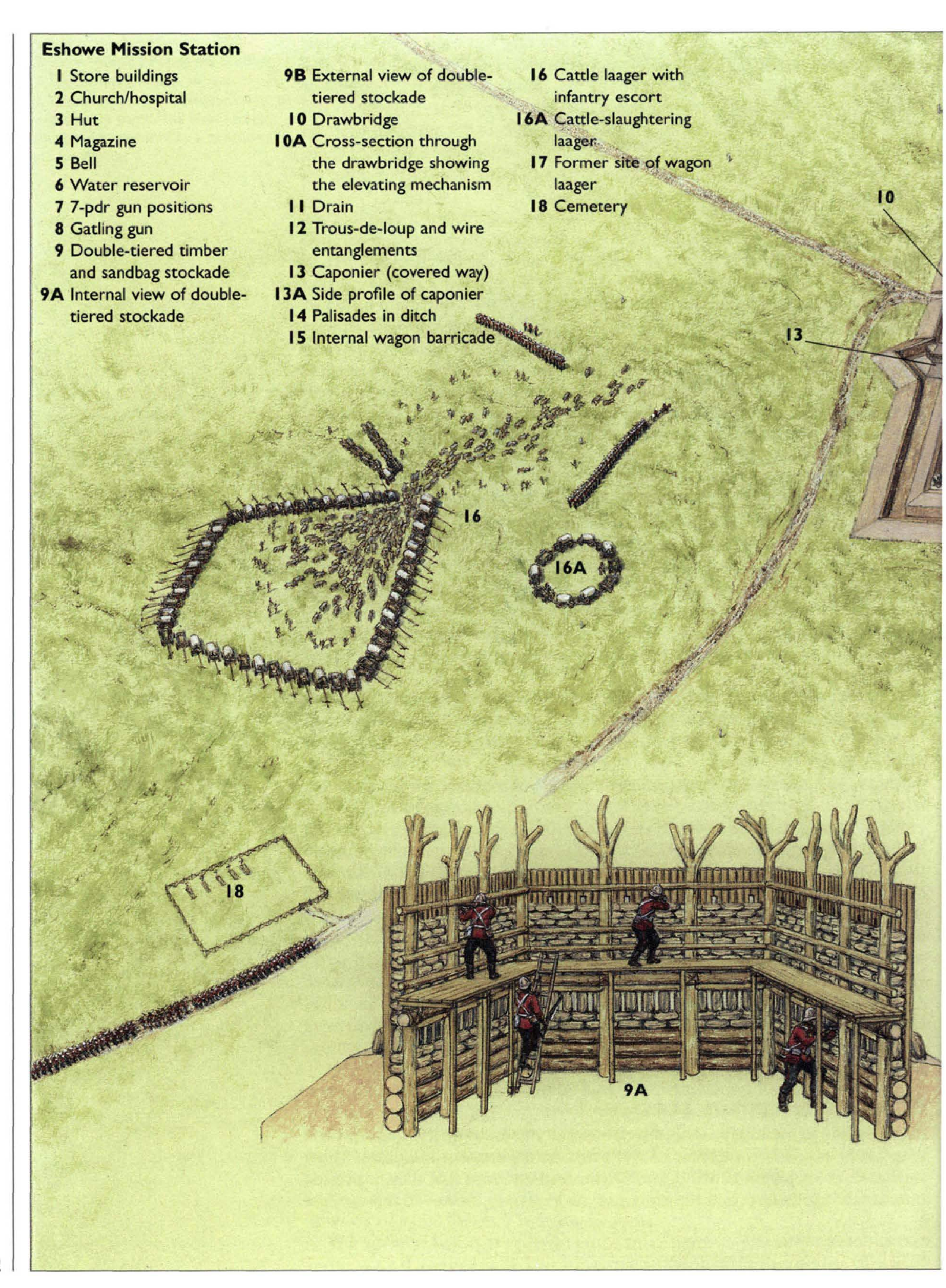
Yet Wynne had been constrained in his choice of ground by Pearson's need to establish a supply depot close to the river, and, rather than selecting the best ground himself, had had to make the best of what was available. Many times in Zululand Engineer officers would face the same predicament; and indeed Wynne himself would soon be required to build a more demanding work under even less favourable circumstances.

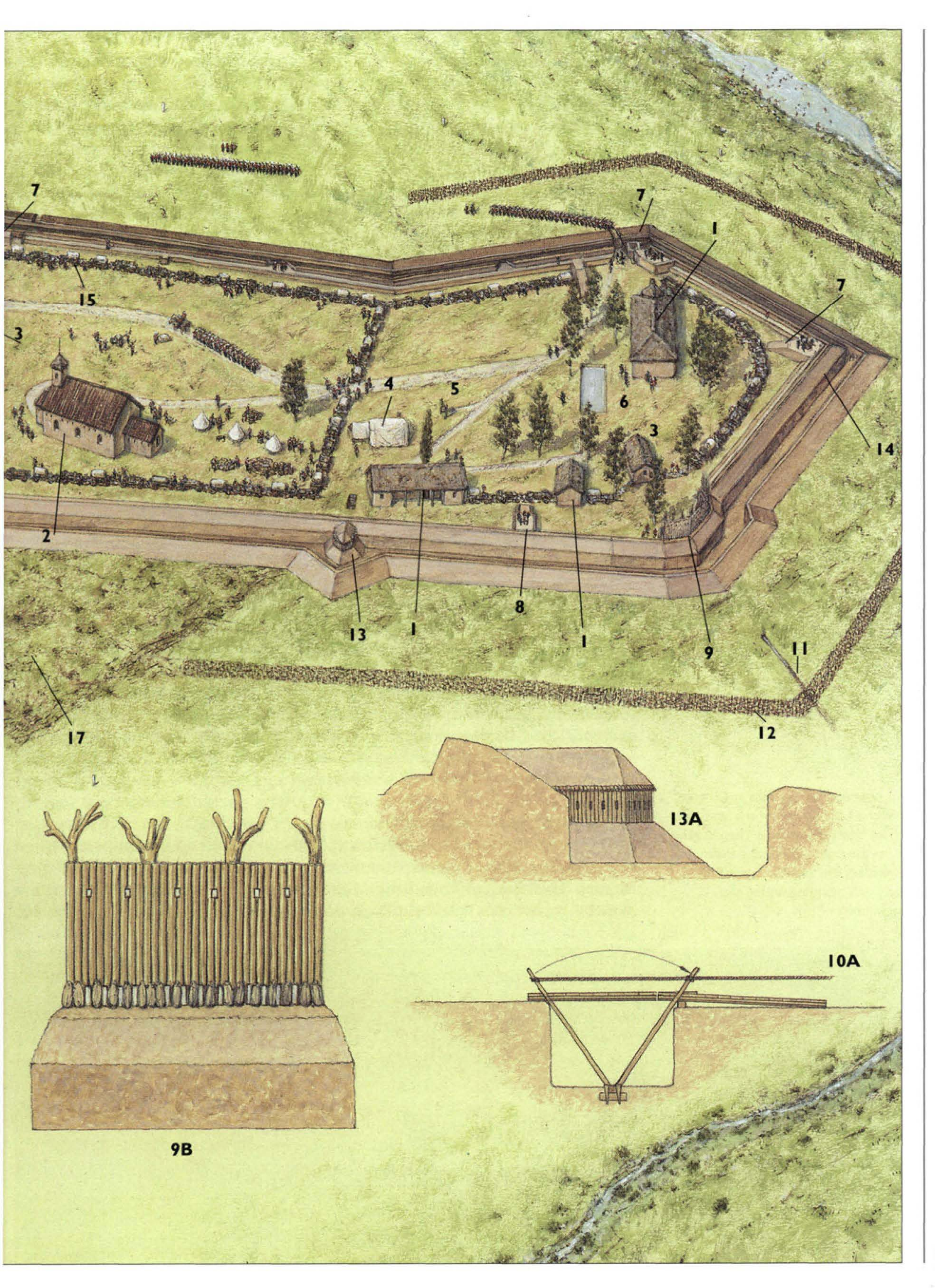
Once the advance began, No. 2 Company was fully committed to the rather more prosaic work of cutting drifts through the dozens of streams and small rivers that bisected the line of advance. 22 January offered more excitement, when, as his column crossed the Nyezane River, Pearson was attacked by a force of 6,000 Zulus who had occupied the heights beyond. When the Zulus attempted to cut off the crossing, Wynne's Engineers were forced to fight as infantry. The Zulus were driven off, however, and Pearson resumed his advance; the following day he occupied his first objective, the mission station at Eshowe.

Eshowe mission station

Eshowe had been chosen as an objective simply because of its location on a map, and because it comprised several permanent European buildings. These were in short supply in Zululand, and Chelmsford intended that they be pressed into service as shelters for a supply depot. As a mission, however, the site had

[2] A number of small stone sangers were built to protect Col. Wood's camp at Fort Thinta at this time.


Eshowe Mission Station
1 Store buildings
2 Church/hospital
3 Hut
4 Magazine
5 Bell
6 Water reservoir
7 7-pdr gun positions
8 Gatling gun
9 Double-tiered timber and sandbag stockade
9A Internal view of double-tiered stockade
9B External view of double-tiered stockade
10 Drawbridge
10A Cross-section through the drawbridge showing the elevating mechanism
11 Drain
12 Trous-de-loup and wire entanglements
13 Caponier (covered way)
13A Side profile of caponier
14 Palisades in ditch
15 Internal wagon barricade
16 Cattle laager with infantry escort
16A Cattle-slaughtering laager
17 Former site of wagon laager
18 Cemetery
10
13
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16A
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9A


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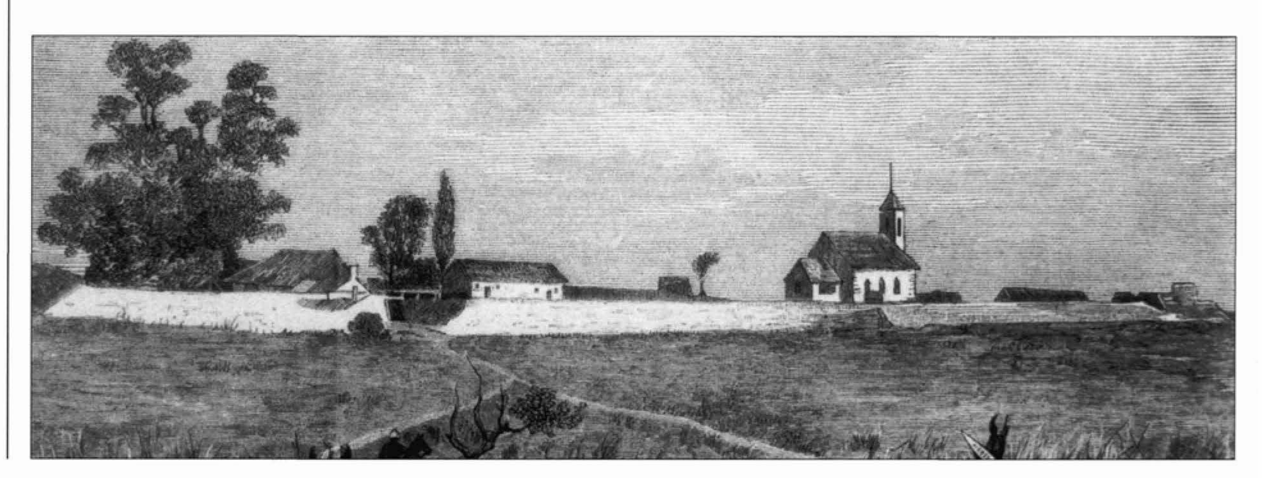
not been chosen with defence in mind, and when Pearson arrived he found the location to be unsuitable in many respects from a military point of view.

The mission station had been built on a ridge of high ground, which fell away to both north and south. The buildings consisted of a church, built of locally manufactured mud bricks, plastered with mud, and with a corrugated iron roof. There were three other sizable buildings; the missionaries' house, complete with veranda, a school building and a large shed which served as a workshop, and storeroom. These were constructed of the same materials as the church, but had thatch roofs. Beyond the house, on ground sloping down to a small stream, there was a fine orchard of fruit trees, and across the stream were several additional small buildings.

On their arrival, Pearson's men camped along the ridge on either side of the mission. Pearson expected to receive further instructions to continue the advance, and at that point the mission was intended to be no more than a supply depot. Wynne was instructed to trace out a work around the buildings that might be defended by a garrison of 400 men. He began clearing the bush away from the buildings to secure the field of fire, and regretfully found it necessary to cut down the fruit trees, which provided cover to within a few yards of the house. Once again, Wynne traced out the profiles while his Sappers marked them out, and men of the infantry and auxiliaries provided the labour. Captain Hart, who was staff officer to one of the auxiliary units – the 2nd NNC – left an interesting description of how he employed his untrained men in such work:

> My plan of entrenching ground with them was far simpler than the military regulation one of marking out lines of the trench with white tape. I dispensed with the tape, and made the natives all hold hands, and stretch out thus in a string at arm's length. Then I walked along the string of men, and put them exactly on the ground where the entrenchment was to be dug. Next I had a pickaxe and a shovel put by other men at the feet of each man in the string, and then, but not till then, I let the men leave go hands, whereupon they would commence to dig where they stood, each excavating a bit of trench from where he stood, to his neighbour on his right. I had those entrenched the most exposed parts of the position at [Eshowe] while the Engineers, with the regular soldiers, were making a substantial fort within.

On 25 January unsettling rumours began to circulate among the garrison that some of the Colonial troops on vedette duty – who spoke Zulu – had heard shouts being passed across distant hilltops that the Zulu had won a great victory. This was confirmed the following day when a runner arrived with a sketchy report of a defeat on 22 January. The full significance of the disaster



An overview of the fort at Eshowe, sketched at the end of the war, after it had been abandoned. The church is on the right – note the main entrance, left, and the trees that were left standing within the perimeter.

was not revealed until the 28th, when a note from Chelmsford indicated that the Centre Column had suffered a severe loss, and baldly informed Pearson that he might now have to face the full weight of the Zulu army unsupported. This information completely transformed Pearson's situation. No longer could Eshowe be regarded as merely a staging post on the line of advance; he must either retire to the border, or be prepared to hold the post with his entire column. After careful deliberation, it was decided to hold the post, but with a reduced garrison; the bulk of the auxiliaries, plus the mounted troops, would be sent back to the border, a decision based on the difficulties of feeding and housing them. The remainder of the column would dig in.

The task facing Wynne had become immeasurably more challenging. He had already begun a work to surround the existing mission buildings, but instead of a small garrison on the line of communication, it would now have to provide shelter for some 1,700 men indefinitely. Moreover, the stark realities underpinning Chemsford's despatch suggested that it might be attacked by overwhelming numbers at any point. Over the next few days, the garrison worked with renewed determination, although interrupted by occasional false alarms, which sent the men scrambling to 'fall in', trampling Wynne's careful profiles and half-completed ramparts as they went.

One immediate improvement was to incorporate the wagons – which had hitherto been parked outside the fort – as part of the defences. They were placed in a line inside the perimeter of the ramparts, about ten yards from the parapets, so as to provide a formidable inner barricade all round. The gap between the wagons and the ramparts was large enough to allow men to move to and fro to man the parapets, while the wagons provided an effective traverse, which prevented any enemy fire striking into the troops' backs. The remainder of the wagons were arranged in a line across the centre of the fort, to provide a further traverse. At night, the wagons would provide shelter; since there was insufficient room to erect tents within the perimeter, the men would have to sleep under the wagons.

The fort at Eshowe would prove the most ambitious work built in Zululand during the war. It was roughly 150 yards long by 50 yards wide, an irregular oblong with a salient towards the north to provide some cover for the dead ground there. All the buildings were incorporated within the perimeter. The house, school and workshop had been pressed into service as sheds, and to prevent the roofs from being a fire risk Wynne ordered them to be plastered with mud. The church was adopted as a hospital, and was prepared for defence by knocking a row of loopholes through the walls about a foot below the eves. A wooden platform was added in the tower for a lookout, and the windows and doors were barricaded. Outside the perimeter, the outlying buildings, beyond the stream, were destroyed with gun-cotton, while the Natal Native Pioneers worked to clear the bush. Fortunately, this gave ample supply of wood for the job of revetting the main ramparts.

The basic techniques employed at Fort Tenedos were used to greater effect at Eshowe. The ditch was formidable, and was 7ft deep in most places, while the earth was piled up to provide a rampart 6ft high. A banquette inside allowed the defenders to fire over the top of the rampart. In some places, the rampart was as high as 8ft, to allow the troops to move freely behind it without fear of being hit by enemy fire. The outer edges of the ramparts were securely revetted with stakes to prevent the soil from collapsing into the ditch. Gun platforms were built at the angles to allow the column's artillery – including a Gatling gun, manned by the Naval Brigade – to fire over the ramparts.

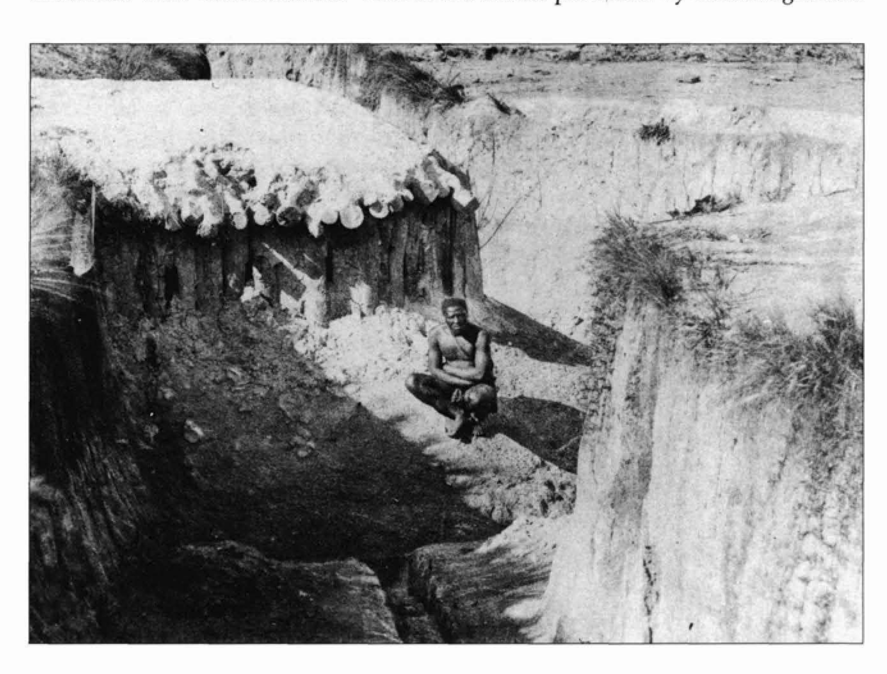
The basic trace of the work was finished by the end of the first week of February, but as no Zulu attack had materialised, Wynne was able to add significant improvements. A wooden drawbridge – which hinged upwards on poles made from the disselbooms of wagons – was added to allow the garrison to pass through the main entrance and across the ditches. A rolling bridge of timber

lashed together was made for wagons. At the south-eastern angle, where a bastion had been constructed to command falling ground outside, a stockade was built to provide a second, higher level of fire. The stockade was made from standing trees, with a diameter of about 2ft each, with a wooden platform behind, and 'sandbags' piled up in front. The bags were actually supply sacks, which, as soon as the Commissariat had issued the contents, were filled with earth by the Engineers, and used to make barricades. Similar sacks were used to make 'blindages' – screens to protect the crews from fire – around the gun emplacements.

One of the tactical weaknesses of protracted lines of ramparts and ditches was that the fire from the defenders did not always reach into the bottom of the ditch, should the attackers advance that close. To counteract this, Wynne built 'caponiers' – covered ways – in the middle of the long south wall and near the main entrance. A salient was cut into the trench to form a projecting angle, and into this the caponier jutted from within the main ramparts. The sides of the caponier were built up with stakes and the roof made from timber, covered with soil. Gaps were left in the sides to provide loopholes. The floor was below ground level, so that troops entering the tunnel would find themselves looking through the loopholes down the length of the trench. The effect of their fire on any Zulus who had managed to enter the trench, and who were sheltering there in the dead ground immediately below the ramparts, would have been devastating.

Since the campaign had begun, the weather had been poor, and it deteriorated once the column was based at Eshowe. Hot, sultry days gave way in the evening to heavy downpours of rain that fell sporadically until the early hours. Although the troops were often employed outside the fort during the day, the garrison slept within the perimeter each night, and the passage of so many men – and the few remaining animals – soon reduced the interior of the fort to a quagmire. To alleviate this problem, Wynne constructed a covered drain, a channel 11ft deep, revetted with stakes and covered over, which passed under the ramparts on the southern face, and emptied towards a stream about 30 yards away.

With the basic perimeter secured, Wynne turned his attention to stabilising the overall structures, and the track through the centre of the fort was made more durable by being paved with large stones. The tracks around the entrances were 'macadamised' with small stones produced by smashing rocks.



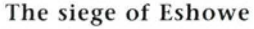
A photograph of the outer trench at Eshowe, suggesting the impressive nature of Wynne's works. In the centre is one of the caponiers, or covered ways, revetted with logs and covered with soil, which sheltered troops entering from inside the parapet (out of the picture, left). The troops could then fire through the loopholes, visible here, down the length of the trench.

One perennial problem for the garrison would remain the safety of the column's oxen. Pearson had begun his advance with just over 400 wagons and carts, which were drawn by over 3,000 oxen and 100 mules. It was clearly impossible to secure these within the confines of the fort, yet it was vital that a significant number of them remained at Eshowe, not only because the transport would be completely immobilised without them, but because as a last resort they were a source of food. When Pearson decided to reduce the size of the garrison, it was judged feasible to return some of the transport oxen to the border. On 30 January about 1,000 oxen and 27 mules were sent back to the border under the guard of African drivers. By this stage, however, Zulu patrols had cut the road, and about half the oxen were captured only a mile or two from the mission. The rest returned to the camp.



A view along the northern face of the fort today, showing Wynne's enduring legacy. Trench on the left; inner rampart right.

To corral those that remained, Wynne first arranged a cattle pen, constructed from empty wagons, in a V shape with the wide end abutting the southern face of the entrenchment. The cattle were driven out each day to pasture under guard, but the passage of so many animals close to the fort soon contributed to the fouling of the ground. As a result, cattle 'kraals' were built away from the main complex, but close enough to be guarded by the garrison, and were moved several times during the occupation. Between 1 February and 16 March, an offset square cattle laager was built at the head of the valley to the south-west of the fort, about 150 yards away; between 17 March and 4 April they were contained in two circular laagers opposite the southern face. Those cattle that could not be contained within the laagers, together with the few horses and mules which remained with the garrison, were driven into the shelter of the ditches at night.

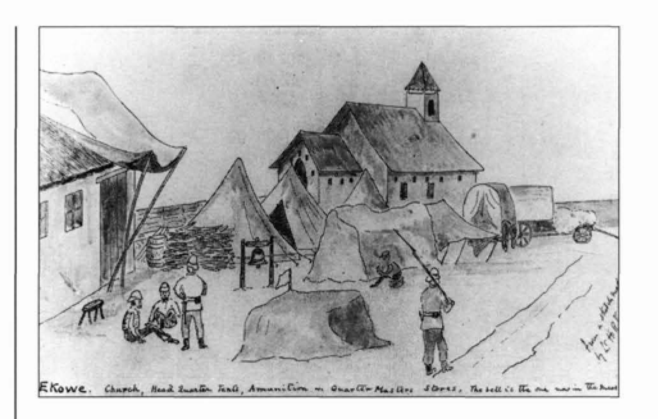


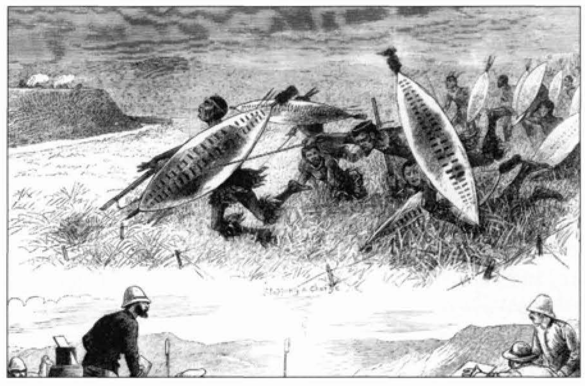
The siege of Eshowe

Pearson's decision to hold Eshowe was based partly on the need to maintain the impression that, in the aftermath of Isandlwana, the British had not abandoned the invasion. In that he was undoubtedly successful; King Cetshwayo was indignant that the British had apparently settled down in Zululand as if it was already conquered, and he ordered his commanders in the coastal districts to try every means short of a direct attack to dislodge the garrison.

It was already apparent, in the aftermath of Rorke's Drift, that Zulu frontal assaults on defended positions were likely to be extremely costly and had little chance of success. Although the young men who made up the bulk of the Zulu army were confident that they could overrun the British as they had at Isandlwana, the king forbade them to attack entrenchments, warning them that 'if you put your faces into the lairs of the wild beasts, you are sure to get clawed'. For several weeks after the battles of 22/23 January, the Zulu army dispersed to recover, but once the men were rested, and were prepared to answer the king's instructions again, Cetshwayo directed that those living in the area around Eshowe should collect at the royal homesteads there. About 5,000 men complied, and they were placed under the command of Prince Dabulamanzi kaMpande – the king's younger brother, who had led the unsuccessful attack on Rorke's Drift, and who lived locally – and Mavumengwana kaNdlela, one of the senior commanders at Isandlwana.

The Zulu of course had no means to conduct a close siege at their disposal, and no capability of undermining Wynne's fortifications. Nevertheless, their investment of the garrison was efficient. A cordon of temporary grass shelters was constructed in the hills and hollows within sight of the fort, and a force of





TOP LEFT The interior of Fort Eshowe during the siege. The loopholes in the church walls are clearly visible – the tents constituted Pearson's headquarters, while the magazine and quartermasters' stores are covered with tarpaulins. The mission bell was rung to signify an alarm. (Buffs Collection, National Army Museum)

TOP RIGHT A sketch from Eshowe showing how a Zulu attack might be thwarted by wire entanglements in the long grass. In fact, the Zulu considered Eshowe too impregnable to mount a direct assault – but such entanglements were a feature of many British forts in Zululand.

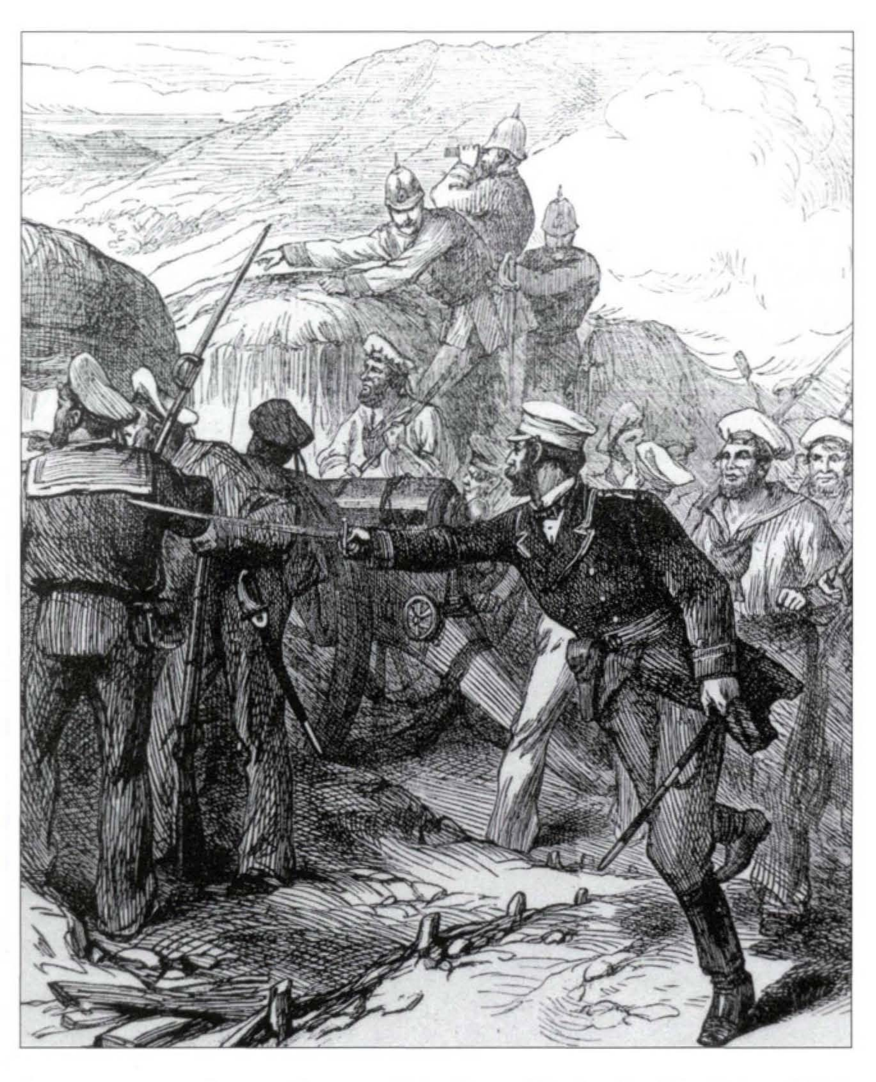
about 500 men, rotated from those occupying the royal homesteads, watched the post daily. They harassed Pearson's patrols, firing on the cattle guards and attempting to ambush outlying vedettes. Whenever a major confrontation seemed imminent, this screen of scouts could be immediately reinforced by the reserves. Although the area close by the fort remained safe enough for the garrison to remain outside during the day, the countryside was firmly in Zulu hands, and it soon became impossible for runners to carry messages to or from the border, giving rise to a sense of isolation which preyed increasingly on British nerves.

Life in the fort at Eshowe

Although Wynne's defences had made the garrison at Eshowe relatively secure, life there was far from comfortable. Pearson had begun the siege with ample supplies of food and ammunition – over 300 rounds per rifle, 127,000 rounds of Gatling ammunition, 500 artillery shells and 80 rockets, and roughly two months' ration of bread and biscuit. Meat was provided from the trek oxen, but it was usually so tough that it had to be stewed for hours to make it edible. After a few weeks the monotony of the diet began to affect the garrison's morale, and regular forays were mounted to loot mealies and pumpkins from abandoned Zulu homesteads nearby.

The weather remained changeable, and the frequent rain made conditions within the fort highly unpleasant. If it meant that fresh water, at least, was in plentiful supply – patrols sent to one of the streams were never interfered with, and in any case Wynne had constructed a drain to carry water off the hospital roof and into a reservoir, made from a wagon lined with a tarpaulin – it also prevented the ground from drying out. The interior of the fort was a sea of mud, and despite Pearson's best endeavours, it was impossible to prevent the water sources from being contaminated. Areas outside the fort were designated as latrines, while tubs were provided within the perimeter for the same purpose each night. Nevertheless, many of the Africans and civilians who remained with the garrison were averse to using the specified latrines and preferred to find a quiet spot of their own, while the animals contributed to the general contamination.

At night, the interior of the fort was not a pleasant place to be. Only the headquarters staff were allowed tents; the remainder of the garrison slept under the wagons. Officers generally had a wagon to themselves, or at least shared with the colleagues from their mess, but the ordinary soldiers lay huddled together in blankets on the wet ground. The air was heavy with the taint of bodies and latrines, and rest was disturbed by the lowing of the animals, and by constant false alarms, which forced the men to stand-to and man the ramparts in the dark. After a few days, stomach complaints, born of the insanitary conditions, became commonplace. By day, the greatest enemy was boredom, and Pearson worked hard to provide duties to keep the men occupied. Work parties were sent out daily to construct a new road from the



Life in Eshowe; Naval Brigade troops rush to man the parapets during one of the many false alarms that characterised the siege. (Rai England Collection)

fort, to serve as a shortcut for any relief column. The bands of the 3rd and 99th regiments played concerts on Sundays, while a missionary, the Rev. Robertson, gave lectures on Zulu history. Nevertheless, minor infringements of duty, the results of frustration and ennui, were common, and the offenders were often flogged as a warning to others.

The Zulu presence was a constant irritation. One private of the Mounted Infantry was ambushed on vedette duty and killed; another had a miraculous escape, riding through a cordon of warriors who suddenly rose out of the grass to attack him; he returned to camp with a number of bullet wounds. The road parties were constantly sniped at. Lt. Martin of the Buffs was hit by a bullet, which passed through the peak of his helmet and out the other side; astonishingly he suffered only a flesh-wound across his forehead. During the day, Wynne's Engineers marked out the course of the road with stakes – and by night the Zulus came down to pull them up. Wynne solved this problem by planting an explosive charge beneath one stake, to be triggered by a friction device if the stake was pulled up. To warn the garrison the word 'torpedo' was painted on a sign nailed to the stake. That evening the garrison heard the sound of an explosion, and thereafter the Zulus refrained from pulling up Wynne's stakes.

Once the fort was secure, Wynne turned his attention to trying to open communications with the garrisons at the border. Although the fort had no

direct line of sight with the Thukela, the mission had been built on high ground, and half a mile away there was a good view towards the border from the edge of the escarpment. Pearson's column had begun the war with no long-range signalling equipment, however, and although the garrisons at forts Pearson and Tenedos in fact remained secure, they had no means to contact Pearson, nor he them. After several weeks of trying, however, the Thukela garrisons managed to improvise a means of communicating by sun-flashes, and on 2 March outposts from the fort noticed flickers of light from the direction of the border camps. The effect on the morale of Pearson's men was electric – but they had no means to respond. Wynne tackled this problem with characteristic energy and ingenuity. His first idea was to build a hot-air balloon from paper, to tie a message to it, and to release it on a day when the wind was blowing towards the Thukela; sadly, at the last minute a thunderstorm blew up and the attempt was abandoned. Next, Wynne constructed a large screen – 12ft by 10ft – from a black tarpaulin, and hinged on a horizontal pivot, which he hoped to swing backwards and forwards to send messages by Morse code. No sooner was the screen erected, however, than a sudden squall tore it to shreds.



Siege warfare: Zulus interfering with markers left out by Wynne's work-parties being blown up by a booby-trapped 'torpedo'.

The problem was eventually solved when a length of lead piping was discovered in the church roof and, together with an officer's shaving mirror, converted into a makeshift heliostat. Imperfect at first – and always at the mercy of cloudy weather – the garrison at last managed to open a viable means of communication with the outside world.

The relief of Eshowe

In fact, the wider war had moved on considerably during Pearson's investment. No Zulu counter-attacks had ravaged Natal at the end of February, and by the end of the month the first British reinforcements were arriving at Durban, and the tide of war began shifting once more in Lord Chelmsford's favour.

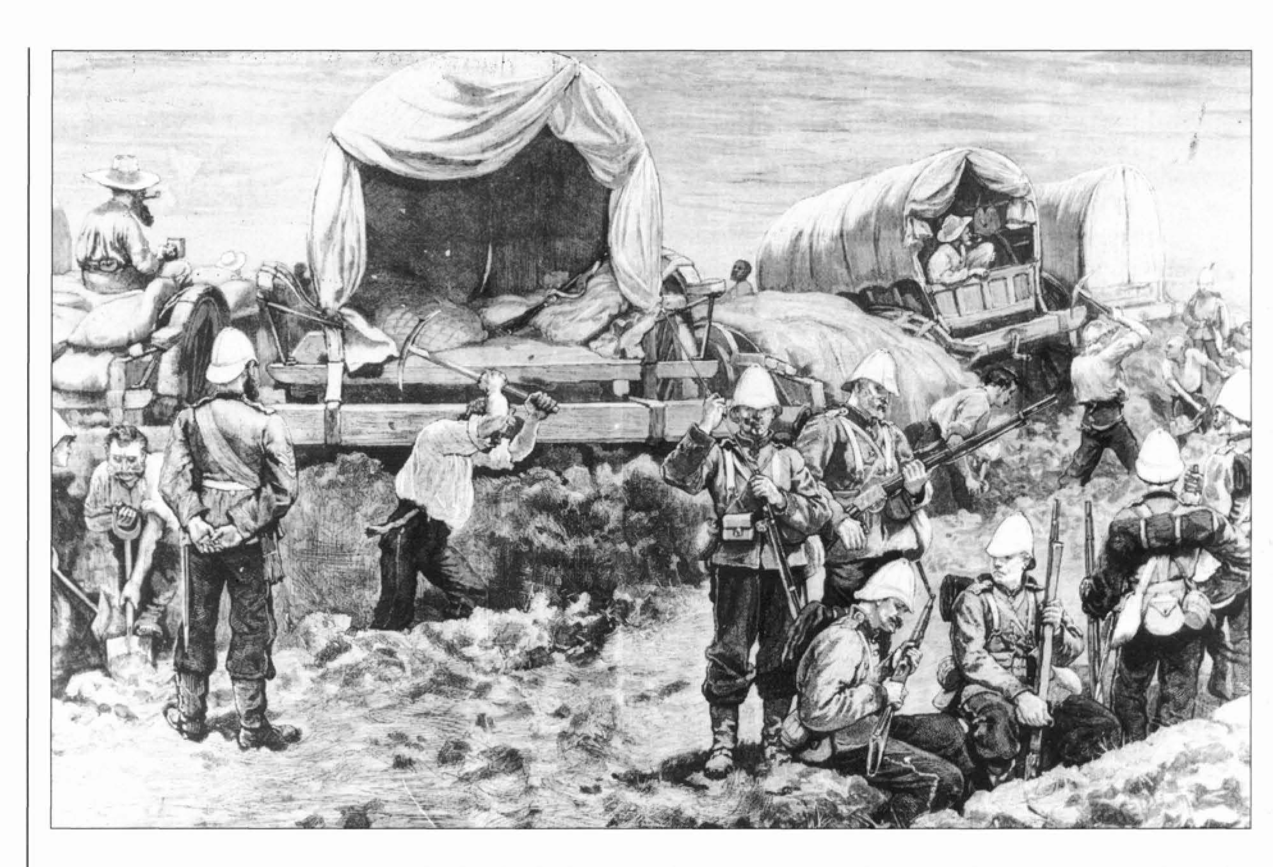
Chelmsford's first objective was to relieve Eshowe, and by the middle of March he had begun to assemble a relief column at the Lower Thukela Drift. After various false starts, the column finally began the advance from Fort Tenedos on 29 March. The relaxed ease of the January invasion was a thing of the past, however, and each night a determined effort was made to draw the camp into a protective laager, to ensure against surprise attacks. This was no mean task, given the numbers of troops and wagons involved – 3,000 white troops, 2,000 auxiliaries, with 122 carts and wagons – and the march would be characterised by confusion and delay as the laager was built each evening – and dismantled each morning.

On the evening of 1 April, the column camped on an open rise near the burnt-out ruins of a Zulu royal homestead known as kwaGingindlovu. The laager constructed that night is of particular interest, since it would be attacked at dawn the following morning by the Zulu forces deployed around Eshowe.

The laager was a mixture of techniques that characterised such temporary fortifications throughout the war – a Boer method applied in a rather more regulated British military style. By no means complex, it had learned the basic lesson of Rorke's Drift; as Captain Molyneux, Chelmsford's 'laager master' on this expedition commented, 'with sufficient men to line the shelter trench two deep, no enemy without artillery can carry it'. The circular wagon-laager favoured by the Boers during the Great Trek of the 1830s was found to be unfavourable for British needs, however, because the transport wagons of 1879 were generally heavier, there were more of them than had been the case in most Boer expeditions, and as a consequence fewer of the drivers were experienced in making laagers on this scale. The British therefore adopted the practice of making square laagers, with the wagons parked not end-to-end, but *en echelon*. This required less manoueverability on the part of each wagon; the sides of the laagers were marked out with stakes, and the drivers simply parked their wagons at an angle next to each other along the line. If there was no surrounding trench, the traces and ox-yolks were left lying in the grass in front of the wagon-pole, and these in themselves provided a significant obstacle to any potential attacker.

At Gingindlovu, however, a 'shelter trench' – a trench with the earth thrown up inside to form a rampart – was dug all around the laager, leaving room for the men to form up between the wagons and the rampart. The movements of vehicles, oxen and troops naturally tended to trample down the grass and any other cover within 40 or 50 yards of the position, thereby giving a clear field of fire across the final approaches. A square was, of course, a defensive formation that the British knew intimately; they were well aware of its strengths and its weaknesses. The straight faces allowed for a concentration of fire on each side as appropriate, but the corners afforded a 'dead zone', untouched by the fire from the sides. To solve this, the British habitually placed artillery pieces in the angles of the square.

At Gingindlovu the laager proved awesomely effective, despite the haste with which it was constructed and the heavy overnight rain that threatened to wash down parts of the parapets and filled the trenches with water. So large was



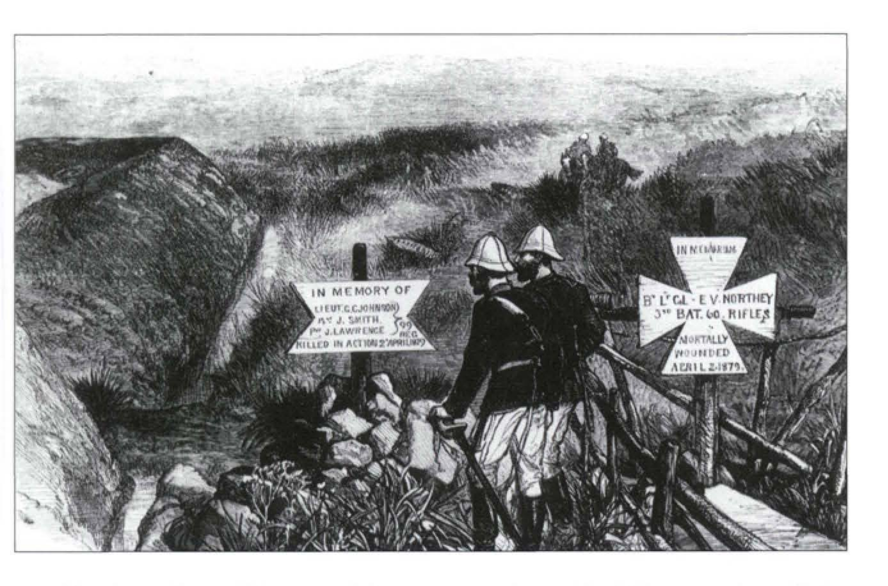
Men of the Eshowe relief column entrenching a laager. Such laagers were in effect temporary and mobile fortifications, which could be made in a few hours utilising a convoy's transport wagons. Note the wagons parked *en echelon*.

Chelmsford's force that his troops were able to line the ramparts four-deep, the front two ranks kneeling, almost completely protected by the ramparts. The transport oxen, auxiliaries and mounted troops were placed within the wagon-laager, protected by the wagons from enemy fire on all sides. British observers marvelled at the skilful way the Zulus deployed under fire, advancing close to the laager under the cover of the long grass, but despite several determined rushes – which came to within a few yards, in one instance, of the Gatling gun protecting one corner – they were completely unable to penetrate the highly destructive British fire. When the Zulu attacks faltered, the British cavalry and auxiliaries sallied out to drive them from the field.

The evacuation of Eshowe

Chelmsford's victory at Gingindlovu broke the Zulu investment of Eshowe, and the following morning detachments from his column advanced to the relief of the garrison. Pearson had held out for 72 days; the fact that, during that time, the Zulu had never once attempted to storm the post was in itself a tribute to Wynne's engineering skills. To the defenders' disappointment, Chelmsford had already decided not to hold the post; it was too far advanced and too exposed to serve as a forward base for his planned new offensive. Instead, both the garrison and the relief column retired to positions much closer to the border, to await the remainder of the reinforcements from Britain. The garrison abandoned the fort with mixed feelings, dragging the wagons out of the traverses, loading up what remained of the serviceable supplies, and destroying anything of military value. Before they had gone a few miles the Zulus entered the post, and set fire to the buildings, although the entrenchments have remained a feature of the site to this day.

During the siege the garrison's losses to enemy activity were minimal, but 35 men had died of disease, and dozens more had to be carried back to the Thukela in wagons. Among them was Captain Warren Wynne, who had begun



Officers visiting British graves on the battlefield of Gingindlovu at the end of the war. The ditch and rampart thrown up around the laager is still visible on the left.

to suffer the effects of fever and dysentery at the end of February, though he had kept working throughout most of the siege. By the time relief came, however, he was seriously ill, and despite being taken by wagon to the Thukela, and treated with great care by the medical staff there, he died on 9 April – his 36th birthday. Shortly before his death he was promoted to the rank of Major. His achievements in Zululand were unequalled by any other Royal Engineer officer during the war, but he remains little remembered today.

The interior of the fort at Eshowe, photographed *c.* June 1879, after its abandonment. Note the height of the ramparts, left, the ground churned up when the long-emplaced wagons were removed, the ruined buildings and the up-turned mission bell (right).

The first invasion: the Centre Column

The Centre Column assembled on the windy ridge at Helpmekaar at the end of 1878, and in the first week of January descended into the Mzinyathi Valley and towards the border. A wagon-track – occasionally used, but nonetheless viable – crossed the river at Rorke's Drift and meandered towards Ulundi. Not far from the crossing, in the shadow of a hill known to the Zulus as Shiyane, was the farm originally built by the trader James Rorke, who had given the area its name. Rorke himself had died in 1875, and his farm had passed to a Swedish missionary society. The two buildings were an ideal basis for a supply depot, and Chelmsford had promptly requisitioned them.

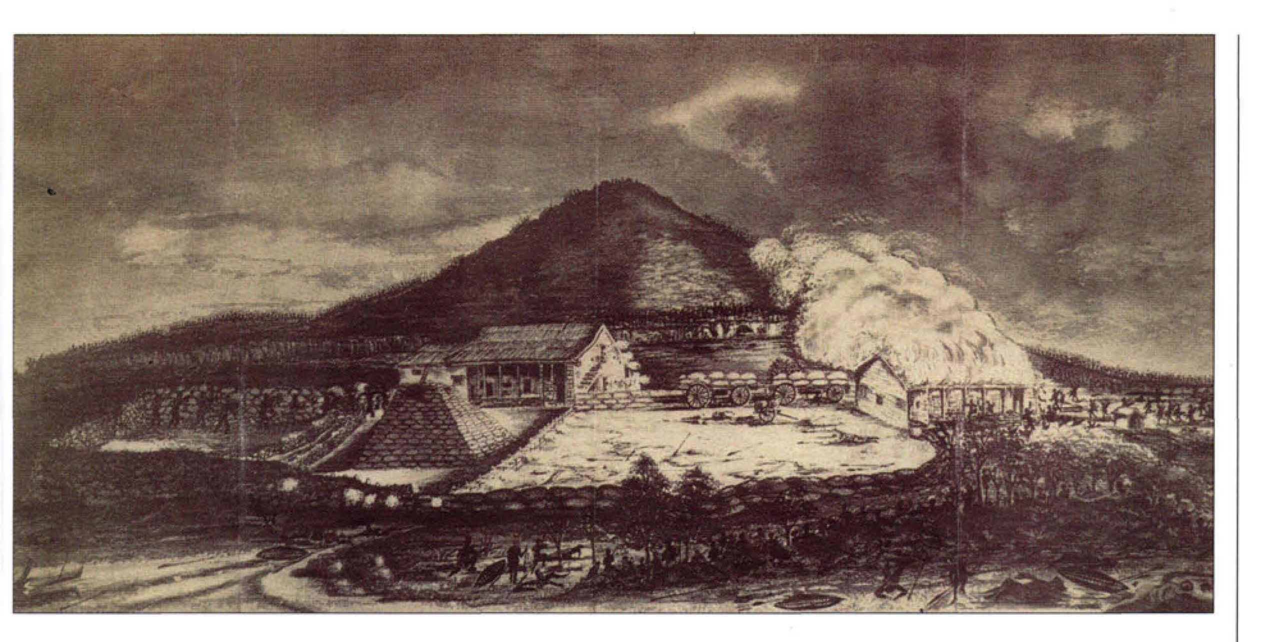
The column crossed along a wide stretch of the river at dawn on 11 January. As with the Coastal Column, the crossing was unopposed, and Chelmsford established a camp on the Zulu bank. On 12 January, to send a clear message to the Zulu that he meant business, he attacked and destroyed the homestead of a border chieftain, Sihayo kaXongo, who lived a few miles ahead, along the line of his advance. On 20 January – his progress delayed by the same bad weather that had dogged Pearson – Chelmsford moved forward to his next objective, the distinctive outcrop known as Isandlwana.

In the light of subsequent events, Chelmsford was much criticised for his failure not to entrench any of the initial positions occupied by the column. There is a suggestion that he asked for Rorke's Drift to be fortified, but there was no sense of urgency, and the troops designated for the task were still at Helpmekaar when the fighting began. A small stone outpost had been constructed near the ruins of Chief Sihayo's homestead to protect parties working on the road, but this was in no sense a permanent structure. No attempts were made to fortify either the large camp on the Zulu bank, or the one at Isandlwana.

Chelmsford later explained his apparent contravention of his own standing orders by pointing out that he had never intended Isandlwana to be a permanent camp, a staging post along the line of communication, and indeed this was true; from the moment he arrived there he had been planning a further advance, and this would have taken place on the 22nd, had not the Zulu intervened. He did not laager the wagons, he said, because the majority were required to move supplies; they were only unloaded after the forward advance on the 21st, and on the morning of the 22nd thirty wagons were due to return to Rorke's Drift to collect provisions. The camp was not entrenched because it covered a large area, and the ground was hard and stony.

Yet there was a certain disingenuousness in all this. While the wagons transporting food supplies were in constant use, those assigned as regimental transport – carrying camp equipment, baggage and ammunition – were parked behind the tents, and could indeed have been laagered. If the ground was stony, the boulders could have been collected and piled up to make small redoubts at key points around the camp – as Col. Wood was doing at that very moment at Fort Thinta, further north. The real reason Chelmsford did not insist on these precautions was that he did not think for a moment that the camp was at risk, and that the Zulu possessed the capabilities to attack it.

The shortcomings of this view were made brutally apparent on 22 January. The previous evening, Chelmsford's scouts had encountered parties of Zulus in the hills 12 miles from Isandlwana. Still convinced that he needed to seize the initiative to bring them to battle, Chelmsford had marched out with about half his force, leaving 1,700 men to guard the camp. In fact, the main Zulu army,



One of the most accurate sketches of the attack on the mission post at Rorke's Drift on the night of 22/23 January 1879. The post had been hastily converted into a fort with temporary barricades of mealie sacks and biscuit boxes; the Zulu stormed the hospital, right, driving the defenders back to the small area in front of the storehouse, left. Note the pile of mealie bags, which was converted into a makeshift redoubt.

25,000-strong, had already outflanked him and lay much closer to Isandlwana than he realised. When its whereabouts were discovered by patrols from the camp at about noon on the 22nd, it advanced rapidly to the attack. The camp was surrounded and the scattered British parties driven back through the tents and overrun. Over 1,300 men were killed; a mere 60 of the survivors were Europeans.

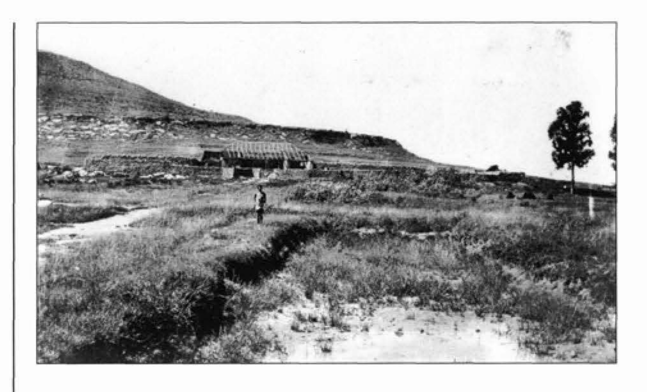
In the aftermath of the attack on Isandlwana, the Zulu regiments comprising their reserve, about 3,500-strong, pursued the British survivors to the border, and crossed the Mzinyathi River into British territory. Here they began to raid the deserted farms and settlements on the Natal bank, and moved up towards the garrison Lord Chelmsford had left behind at Rorke's Drift.

The defence of Rorke's Drift

The post at Rorke's Drift consisted of two buildings about 30 yards apart, and built in the local style. They were long, low bungalows with open verandas and thatched roofs, the end walls built of roughly dressed stone, and the side walls of locally made bricks. The interior walls were of sun-dried mud brick, plastered over. One building had served Jim Rorke as his house, and had been taken over by the missionary, the Rev. Otto Witt, and his family for the same purpose. The other building had been a store, with a large open room on one side, which had served to garage Rorke's wagon; the Witts had used this building as a church. There were a number of small outhouses, including a low kitchen out the back and, off to one side, a solitary privy. A stout cattle kraal, a dry-stone wall about chest high, abutted the eastern end of the storehouse.

Like the mission buildings at Eshowe, the site had never been chosen with defence in mind. Rorke had selected a spot with commanding views of the Mzinyathi Valley upstream of the crossing, with his back to Shiyane hill, which rose in a series of terraces just 300 yards behind the buildings. Along the front of the buildings was a step of rock, part of the same terrace structure, and the ground fell away in a steep slope as much as 6ft high in places, broken between the buildings with lines of exposed rock. Below this ledge was a stone wall and a tangle of bush and long grass which had been partially cleared to make way for an orchard of fruit trees. Further east, also below the ledge, was another cattle kraal, larger, but less well built.

When the army had taken over control of the post, the storehouse had been returned to its original purpose, and had been used to contain the sacks of mealies and boxes of biscuits and tinned meat that constituted the basic





TOP LEFT The site of Rorke's Drift, photographed at the end of the war. In the centre is the old storehouse, surrounded here by the stout stone walls of Fort Bromhead. Behind is the terrace of Shiyane hill, occupied by Zulu musketeers during the battle.

TOP RIGHT The storehouse at Rorke's Drift, photographed c. June 1879. The thatch has been removed from the roof, while the loop-holed two-storey rear wall of Fort Bromhead still stands to the right.

foodstuff rations. On the morning of the 22nd there were over 30 wagon loads of such supplies, waiting for the wagons to return from Isandlwana to collect them. They filled the storehouse to the eaves, with enough sacks over to form two large piles in front of the veranda. They were under the care of a detachment of commissariat officers under Commissary Walter Dunne. The house had been converted into a makeshift hospital, where over 30 patients – most of them suffering from injuries sustained on the march up-country, dysentery or fever – were cared for by a small army medical detachment.

Because the post was on the Natal side of the border, and therefore assumed to be safe, a fairly relaxed atmosphere prevailed before the battle. A small detachment from 5 Company RE, Lt. John Chard and a handful of Sappers, had hurried up ahead of the rest of the company, which was still on the road, to alleviate Chelmsford's chronic shortage of RE personnel. They had arrived by wagon on the 17th, and had camped at the Drift, where Chard was employed repairing and supervising the post on the eve of the column's general advance. Once the main column had moved forward from the camp on the river, however, it was left to a solitary company of the 2/24th Regiment – about 90 men under Lt. Gonville Bromhead – and a company of the NNC auxiliaries to protect the post.

At about noon on the 22nd, the garrison had their first inkling of events at Isandlwana, when the sound of distant firing drifted across the river. Shortly after, the first mounted survivors from the battle began to come past, calling out that the camp had been taken, and that the Zulu were coming to attack Rorke's Drift.

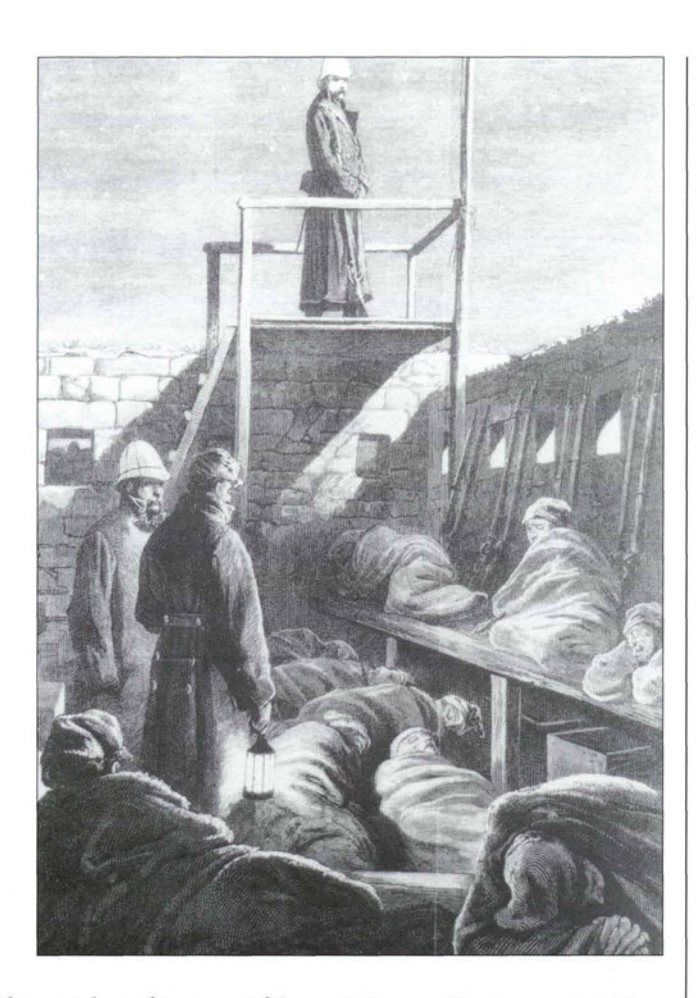
The news was deeply shocking, and posed a very real dilemma to the garrison. Should they try and hold their ground, and attempt to check the Zulu incursion and protect the stockpile of supplies, or should they secure the safety of the sick by falling back on the nearest British garrison? Strategically, it made little difference, as the Zulu were already across the border, and the loss of the supplies was inconsequential in the wake of the destruction of the camp at Isandlwana; it was merely a question of choosing the course that offered the best hope of survival. Since the nearest garrison was at Helpmekaar – several miles away up a steep escarpment – there was little hope of reaching it before the Zulu arrived. Instead, the garrison decided to stay where they were, and to use the stockpile of stores to improvise a barricade.

With the Zulu attack imminent – in fact, only about an hour elapsed between the first news of the disaster and the arrival of the Zulus – Chard had no time to plan even rudimentary earthworks. The ramparts would be made from the sacks and boxes of stores, using whatever defensive advantages were afforded by the buildings and the existing lie of the ground. B Company's tents, which had been placed at the foot of the hill, were struck, and their two wagons dragged into a line between the corners of the two buildings at the back. A line of boxes was run underneath them, and this was piled up with mealie sacks until it constituted a secure barricade about 4ft high. Defenders

were placed in both buildings, and loopholes knocked through the walls with pickaxes.

The front of the post was more problematic, however, as the open verandas made both buildings more vulnerable. At the eastern end, the gap between the well-built cattle kraal and the storehouse was sealed with mealie bags, and the kraal incorporated into the perimeter. Chard then ordered a long barricade to be erected along the front, taking in both buildings and extending to the far western corner of the hospital. Although this was a considerable distance for a rampart unsupported by any form of revetment, the defenders were greatly helped by the presence of the rocky ledge. This in itself formed a natural barrier, and even a wall just two or three bags high was sufficient to shelter men crouching behind it, and secure them against attackers on the other side, 6ft below. Although the garrison worked hard to complete the barricades, the wall was not finished when the Zulu arrived. Indeed, in front of the hospital – physically, the furthest distance from the stockpile of sacks and boxes – the rampart remained both low and flimsy, shored up in one place with a piece of planking.

At about 4.15 pm, a smatter of shots behind Shiyane – the Zulu firing at mounted auxiliaries who had escaped from Isandlwana – announced their imminent arrival. The NNC, who had worked hard at erecting the barricades, promptly threw down their weapons and fled over the barricades and into the bush. Chard now found himself with too great a perimeter to defend with the number of troops at his disposal, and immediately ordered that a traverse barricade be constructed from biscuit boxes along a line running from the western end of the front of the storehouse to the front barricade. With gaps left for the men to pass through, this allowed for the area around either building to be abandoned should it be overrun.



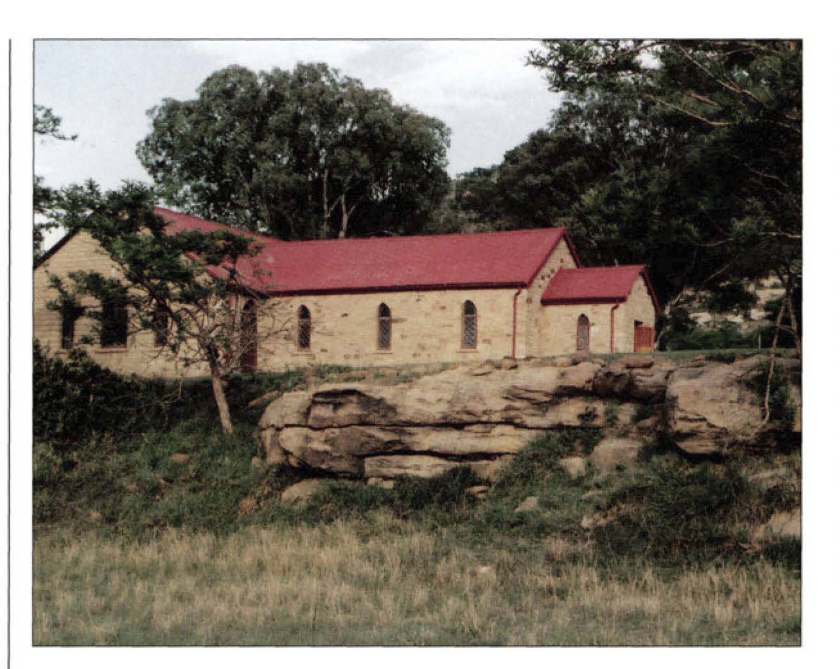
Officers walking the rounds inside Fort Bromhead in February or March 1879. Note the wooden centre platform, the wooden banquette – and the men sleeping in the open.

At about 4.30 pm the advance guard of the Zulu force came round the western flank of Shiyane, and advanced at a run straight towards their nearest target, the back wall. The battle of Rorke's Drift had begun.

The battle of Rorke's Drift

It is usual to consider the subsequent battle in terms of the gallantry of the defenders, or even the remarkable courage and endurance displayed across some eight or ten hours by the attackers. Tactically, however, the crucial lesson to be learned from the battle was of the value of even the most limited form of entrenchments, and of the complete inability of the Zulu to overcome them. In that short hour, and without even the level of engineering works built by Wynne at Fort Tenedos, the garrison had turned the mission at Rorke's Drift into a strongpoint that proved unassailable.

Throughout, the Zulu attacked the post piecemeal, giving the lie to contemporary claims that the invasion of Natal was premeditated. The first assault was made by about 500 or 600 men, who tried to rush the rear wall. The projecting angles of the buildings, however, served as a crude form of bastion, and as the assault reached to within 30 yards of the barricade, it came under such a crossfire from the loopholes on either side that it faltered. The warriors



The site of the post at Rorke's Drift. The church in the background was built during the 1880s on the site of the storehouse; the barricades ran across the top of the ledge in the foreground. Six-feet-high in places, this natural feature became a formidable rampart when topped with even a low barricade.

abandoned the attack and streamed round the western end of the hospital to occupy the bush in front of the post. By this stage, further bodies of Zulus, coming up behind, were sucked into the battle. Although the bush at the front of the post would provide good cover for assaults, that – combined with the shortage of the British front – and the way the Zulu attack developed meant that the commander, Prince Dabulamanzi, was never able to co-ordinate his attacks or use his numerical advantage to good effect. Indeed, the majority of the Zulu probably spent most of the battle crouching down in the bush, searching for an opportunity to exploit British weaknesses by short, determined rushes.

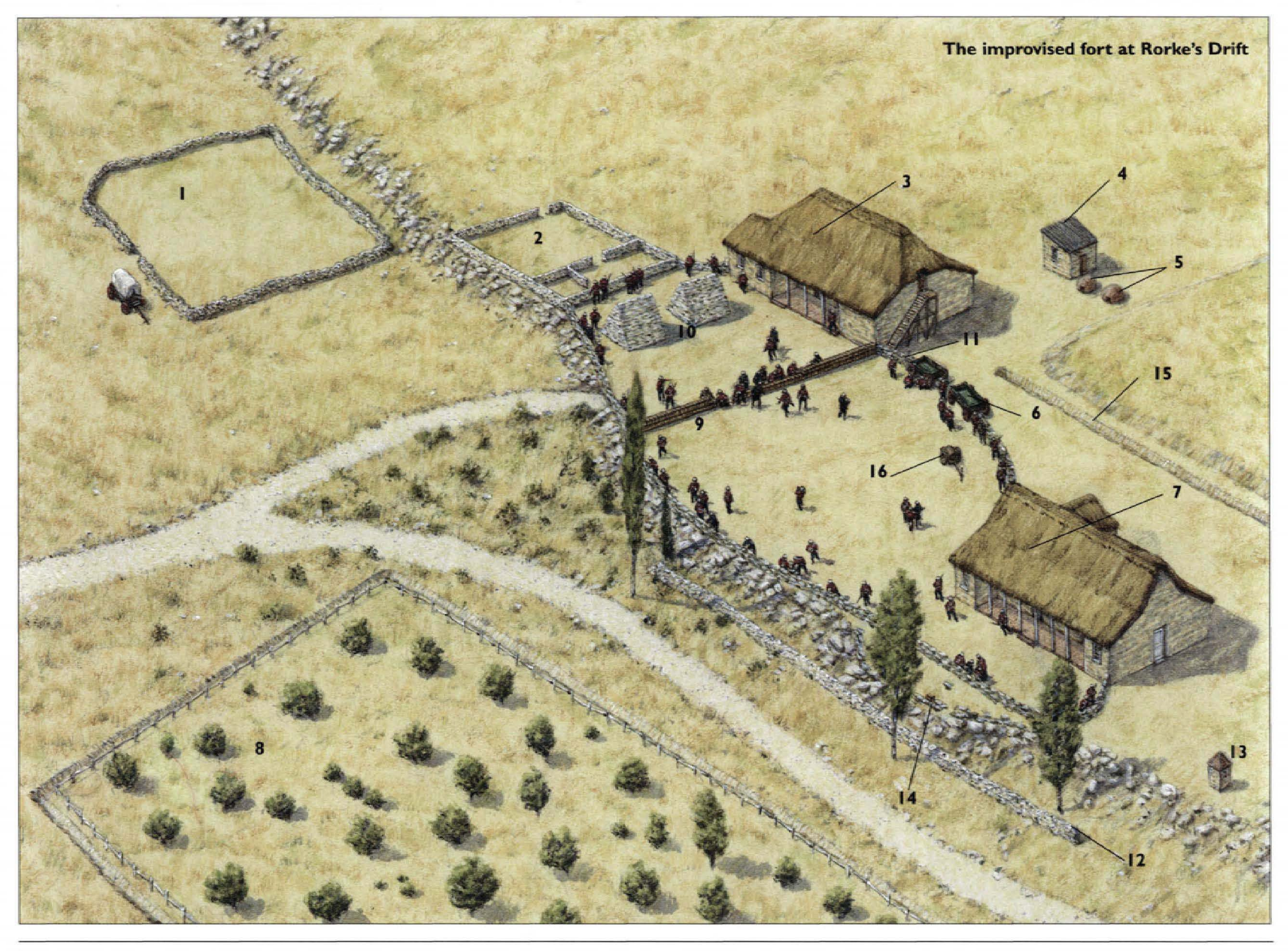
The garrison's inability to clear a field of fire along the front of the post was arguably their greatest weakness. The Zulus massed behind the stone wall – only a few feet from the foot of the terrace in front of the hospital – with relative impunity. Here they mounted a series of attacks that were narrowly repulsed each time at bayonet point. The barricade proved largely useless here, the fighting raging at hand-to-hand. Indeed, after about six such attacks Chard was forced to order the garrison to abandon the veranda of the hospital and fall back to a rampart hastily improvised on the eastern corner of the building. In the meantime, the Zulu extended through the bush across the front of the post, and mounted attacks to probe for weaknesses along the front wall. Here they were unable to make any headway, however, frustrated by the height of the broken ledge, which prevented them stabbing the soldiers above them.

At the same time, numbers of Zulu armed with firearms took possession of the Shiyane terraces, which overlooked the post. From this position, a squad of well-trained riflemen equipped with modern weapons could have rendered the British position untenable within minutes. The Zulu, however, were untrained, and were firing obsolete trade weapons, which were operating at the extreme limit of their range. They were also firing into the evening sun. Below them, the soldiers on the rear wall were, conversely, firing at an optimum range for the Martini-Henry rifles, and with the sun at their backs. In the firefight that followed, the garrison undoubtedly had the upper hand. Even so, the Zulu fire – striking down largely at random in the centre of the yard – caused casualties

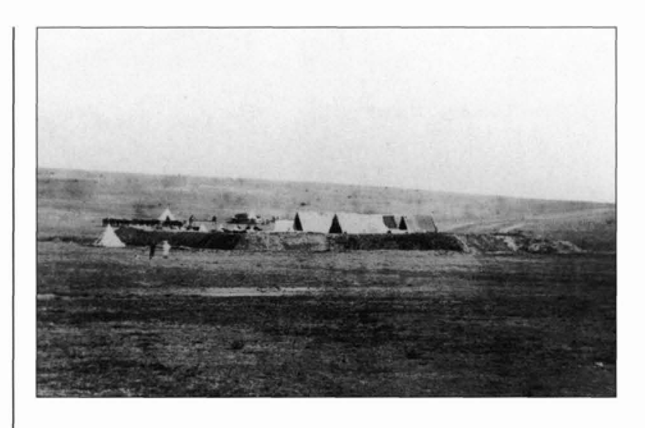
The improvised fort at Rorke's Drift

This illustration shows an overall view of the position from the front. The scene is set shortly before the Zulu approach, and the British troops are in position all the way around the perimeter. There were about 150 men in the defensive garrison overall, and here they can be seen building the barricades, and piling up sacks.

1. Cattle kraal
2. Smaller, better-built kraal
3. Storeroom
4. Cookhouse
5. Ovens
6. Ox-wagons
7. Hospital
8. Fenced garden
9. Biscuit-box barricade under construction
10. Two pyramids of mealie bags
11. Wall of mealie bags
12. 5ft-high wall
13. Toilet
14. Wall abandoned during construction
15. 2ft. ditch
16. Water cart



The improvised fort at Rorke's Drift





TOP LEFT The fort at Helpmekaar, built following the disaster at Isandlwana. In profile the fort was a simple oblong with projecting bastions at each corner; the large galvanised huts that sheltered some of the Centre Column's supplies at the time of the battle have been removed, leaving only the smaller wooden stores. The fort was overlooked by a hill several hundred yards away. (Killie Campbell Collection, Durban)

TOP RIGHT Building the fort at Helpmekaar after Isandlwana. The sketch shows auxiliaries digging the trench and building the ramparts; although the height of the defences is exaggerated, it gives a good impression of the appearance of a typical British work during the war.

which Chard could not afford to sustain, and at about 6 pm he gave the order to abandon the yard and retire to the area in front of the storehouse.

To the Zulu – who had by now forced an entry into the hospital, had set fire to the roof, and were fighting with the defenders hand-to-hand – victory must have seemed very close; they had captured nearly half the British position. Yet in fact, the true situation was largely the opposite, as Chard was now much more secure, with less perimeter to defend, and the storehouse blocking the worst of the fire from Shiyane. It was by now getting dark, and the flames from the burning hospital lit up the area immediately around, providing an unexpected means of illuminating each fresh Zulu attack. Inside the hospital, the defenders fought from room to room, knocking holes in the flimsy interior walls where there were no doors, and dragging the patients after them until at last they emerged through a window into the abandoned yard, and scurried across to the storehouse, covered by the fire of men lining the biscuit-box barricade.

For several hours, the Zulu attempted to find weak spots in the new British position, exploiting the gloom at the far end of the storehouse – away from the hospital – to attack the cattle kraal, driving the defenders back to the interior wall. Two large piles of mealie bags still lay in front of the store, however, and these were dragged together to form a small redoubt, the top scooped out, like a cone, to house a handful of riflemen. These men could fire over the heads of the men on the wall, just a few yards away, and bring a devastating extra layer of fire to bear on each attack. Attempts to repeat the success of the firing of the hospital roof were thwarted by the defenders of the storehouse loopholes, who shot down Zulus with burning grass attached to their spears as they approached.

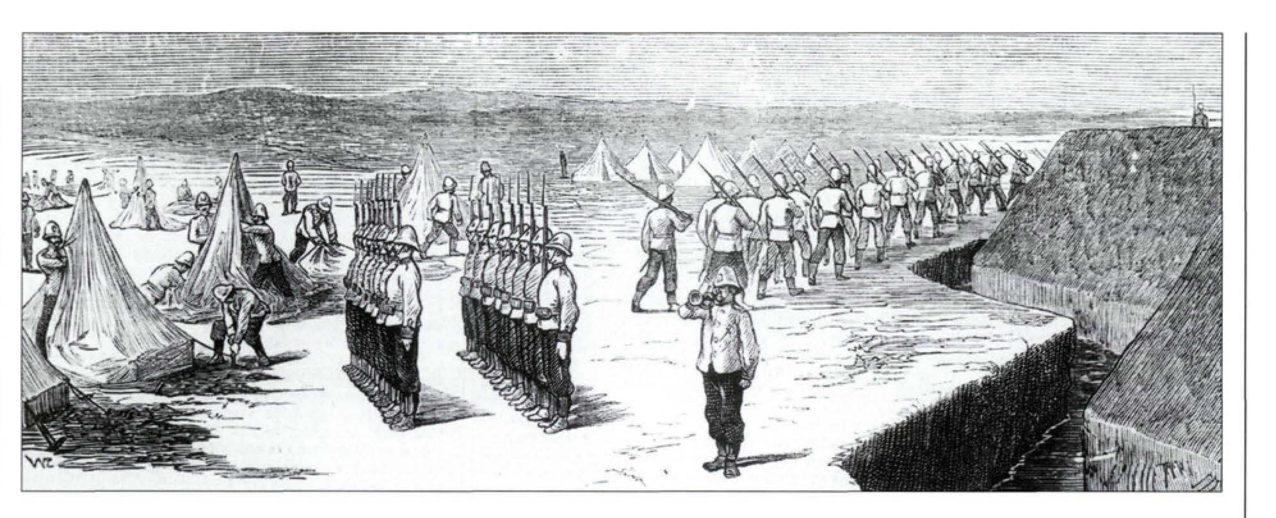
Hampered by darkness – which made even the limited co-ordination of the daylight attacks impossible – and unable to force an entry into the British position, the Zulu began to withdraw in the early hours of the 23rd, and by dawn the following morning they had abandoned the field.

The devastation around the post bore testimony to not only the fierce nature of the fighting, but to the destructiveness of British fire at close range. Over 350 Zulu bodies were dragged from around the barricades, and dozens more lay on the line of retreat. Altogether as many as 600 Zulu were thought to have been killed – as much as 20 per cent of the total attacking force. The number of wounded is unknown, but probably also ran to hundreds.

Conversely, although many of Chard's men were wounded, just 17 were killed – extraordinary proof of the capacity of even the most basic barricade to nullify the effect of Zulu close-quarter weapons.

The aftermath of Rorke's Drift

On the afternoon of 22 January, two companies of the 1/24th Regiment, who had been left to garrison the camp at Helpmekaar, started the march down the steep pass to reinforce the garrison at Rorke's Drift. Along the way, they were passed by the first terrified survivors from Isandlwana, fleeing in the opposite

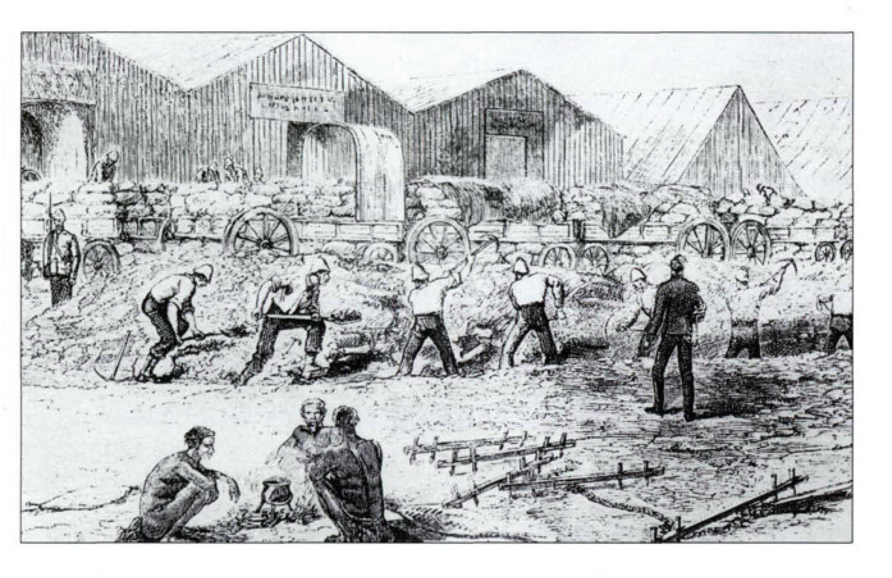


Sunset at Helpmekaar; troops strike their tents and march inside the fort for security overnight. This was a common routine in most of the British forts early in the war.

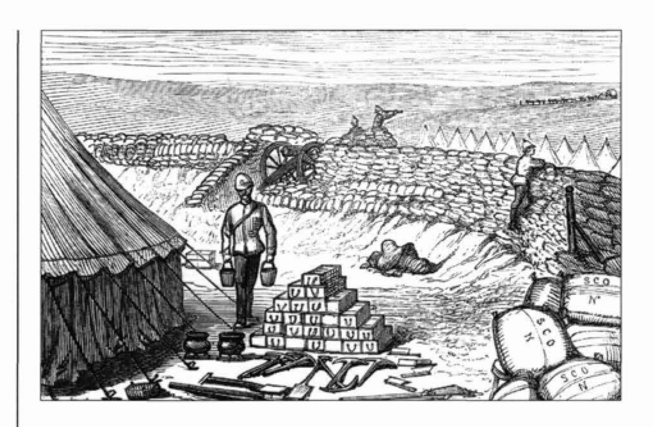
direction, and when they reached the foot of the escarpment, they could see bodies of Zulu moving across the road ahead of them, and the mission station in flames beyond. Convinced that the post had already fallen, they marched hurriedly back to Helpmekaar to defend the camp there.

The post at Helpmekaar consisted of three large wooden sheds, with galvanised iron roofs, and five smaller outhouses, all of which had been erected to house the supplies that would be accumulated there en route forward to the column. By the time the 24th returned to the post, a handful of survivors had already reached it, and began feverishly preparing it for defence. A number of wagons parked close by were dragged into a makeshift laager and piled up with supplies, and a shallow trench hastily dug around it. The return of the infantry speeded up the process, so that by nightfall the post was in a reasonable state of defence. By that time a very real state of alarm prevailed, and the garrison, about 180 strong, manned the barricades all night in expectation of attack. When dawn broke the following morning, a heavy mist lay over the hills, and when a party of auxiliaries approached from the direction of Rorke's Drift they were taken for Zulus, and a few shots were fired before the error was realised.

Indeed, the panic extended beyond Helpmekaar and further down the road into Natal. Beyond the Biggarsberg escarpment, at Helpmekaar, two companies of the 4th Regiment under Col. Bray were on the march up when news of Isandlwana reached them. They turned off the road to the nearby magistrate's

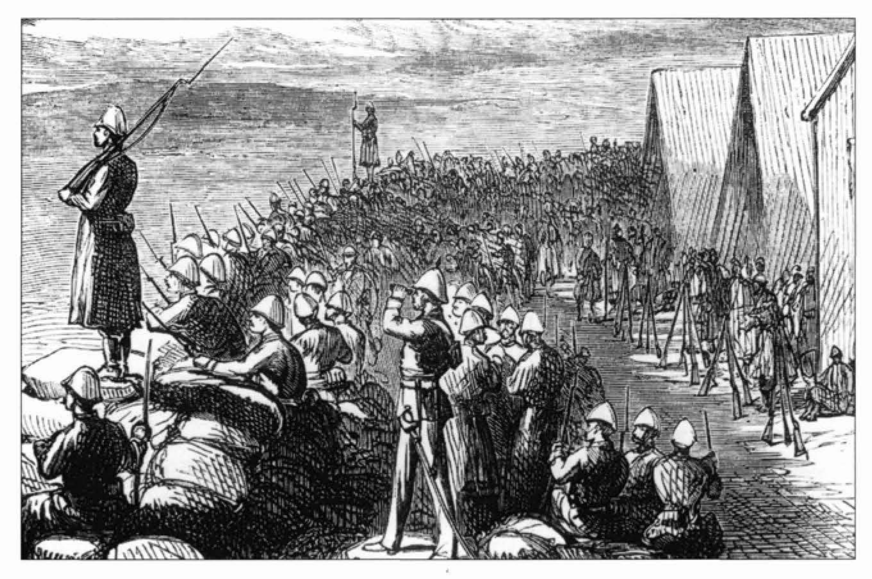


Helpmekaar, sketched shortly after Isandlwana. This picture shows both the three iron sheds that protected the Centre Column's supply dump, left, and the wooden sheds, right. Note the way that the troops are forming the rampart by piling up earth from the trench; and the way the wagons beyond are barricaded with supplies.





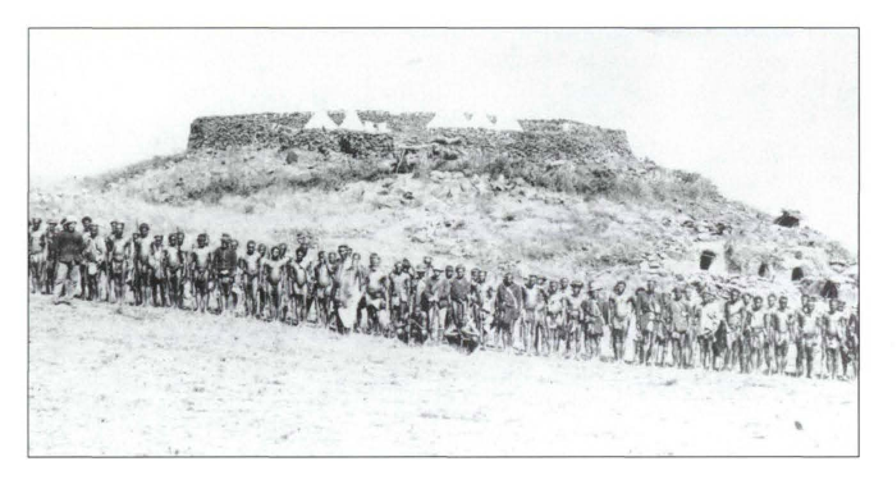
The presence of journalists at Helpmekaar meant that the fort received more coverage than its strategic importance warranted. Nevertheless, these three sketches of the interior provide a vivid impression of life in many of the Anglo-Zulu War forts; note the ramparts revetted with mealie bags, the blindage screening the emplaced gun, the barricaded wagons inside the perimeter, and the crowded conditions during an alarm.



residency at Msinga, occupied the buildings, and knocked loopholes through the walls. When no attack had developed by the 24th, Bray decided to move his position to a better defensive site, a stony knoll on the far side of the road. Here on the 29th he was reinforced by Major Bengough's 2nd Battalion of the 1st Regiment, NNC. A few days later Bray resumed his march to Helpmekaar, leaving Bengough to hold the post at Msinga.

In fact, by that stage – although the remnants of the Centre Column did not yet know it – the immediate danger of a Zulu attack had already passed. Lord Chelmsford, who had spent the 22nd searching in vain for the Zulu in the hills beyond Isandlwana, had returned to find the camp devastated. After a grim night spent among the freshly dead on the battlefield, he returned to Rorke's Drift the following morning. Leaving the remains of his command at Rorke's Drift, and pausing only to order that both Rorke's Drift and Helpmekaar be properly fortified, he rode to Pietermaritzburg to salvage what he could of his plan of campaign.

At Helpmekaar the situation was improved on the 29th by the arrival at last of Captain Jones' 5th Company RE, whose march to the front had been delayed by bad weather. While half the company proceeded to Rorke's Drift, the remainder set about constructing a proper fort at Helpmekaar. The entrenchments dug on the evening of the 22nd were widened and a thick rampart constructed inside. In its final form, the fort at Helpmekaar consisted of an oblong, with projecting bastions at all four corners. The wagons were placed inside the walls, and heavily revetted with stacks and boxes of supplies.

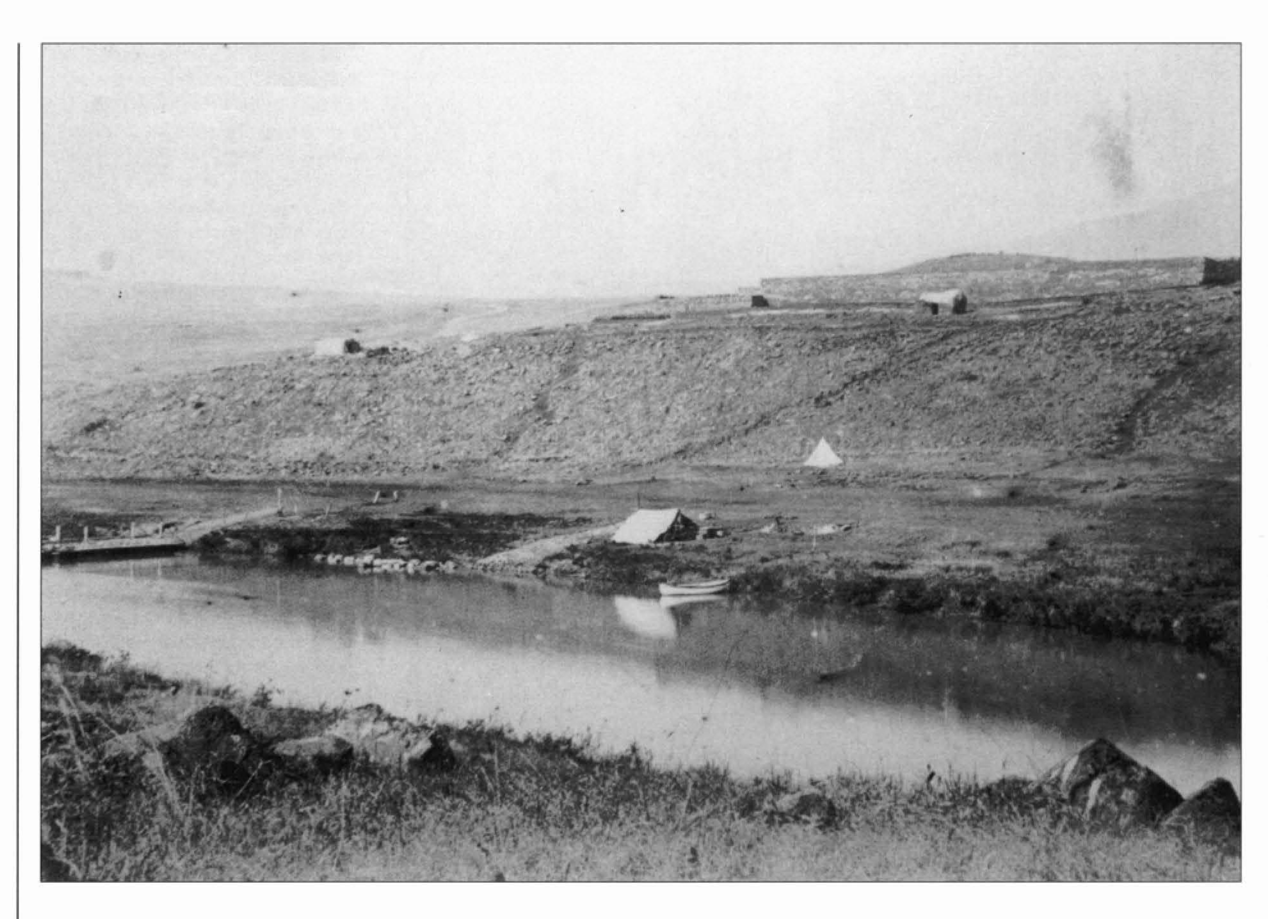


Auxiliaries of Major Harcourt Bengough's 2/1st NNC parade at the foot of Fort Bengough, built on a knoll near the road on the Natal side of the Biggarsberg escarpment. Note the tents for officers and NCOs within the walls; and the daytime shelters for the men, right. (KwaZulu Natal Archives, Pietermaritzburg Depot)

In the centre stood the three iron sheds, the smaller huts, and a makeshift hospital. Three 7-pdr guns were placed at three of the angles.

At Rorke's Drift, meanwhile, the remains of Lord Chelmsford's command was camped alongside B Company and the veterans of the battle of the 22nd/23rd. As soon as Chelmsford had arrived from Isandlwana on the morning of the 23rd, attempts were made to improve the defences. The thatch was removed from the roof of the storehouse, the remaining walls of the hospital building were pulled down, and the temporary barricades strengthened. With the arrival of the Engineers at the end of the month, a new, more permanent post was constructed, and called Fort Bromhead. This was made from stone, which could be collected in abundance from the Shiyane terraces, and followed broadly Chard's old defensive lines. At the centre was the storehouse, the rafters now covered with tarpaulins, and linked to the cattle

Part of the walls of Fort Bengough today, showing the extent to which it commanded the open countryside around. At one point the walls were as high as 15ft, and loopholed.



Fort Melvill, the strong stone fort built overlooking the ponts at Rorke's Drift in March 1879, photographed from the Zulu bank.

kraal by a stone wall. The perimeter followed the lines of Chard's barricades, ending in the near wall of the hospital – the only one still standing – which was incorporated into the defences. Across the front of the post the wall was over 7ft high, with regular loopholes to fire through. At the back, however, facing Shiyane, it was much higher, to provide a second layer of fire, with firing platforms raised from planking. There were no bastions at the corners, but at least one wooden platform was built to provide a raised lookout post.

Fort Bengough

At Msinga, Bengough's men meanwhile had been building their own secure fort. It was made entirely of loose stones, the walls piled up about 6ft high and 3ft thick. Originally an oblong with projecting bastions at opposite corners, it was later expanded into a flattened oval, and the walls raised to 15ft, with loopholes. The interior was divided into three by simple stone traverses, the officers occupying one end, the men the other, while the centre contained a square magazine. Once the tension along the border began to dissipate, both officers and men erected grass huts below the knoll for their convenience during the daytime, and the interior was only occupied at night. Bengough proved surprisingly adept at commanding auxiliaries, and used the inactivity to improve his men's musketry and general training. The fort was appropriately known as Fort Bengough.

In the weeks after the battles, life nonetheless remained extremely unpleasant for the garrisons at both Rorke's Drift and Helpmekaar. Although the men were allowed out during the day, they slept within the forts at night, which were both overcrowded and insanitary. Their discomfort was made worse by the fact that all Chelmsford's men had lost their tents, spare clothing and much of their kit at Isandlwana; many, indeed, had only the uniforms they

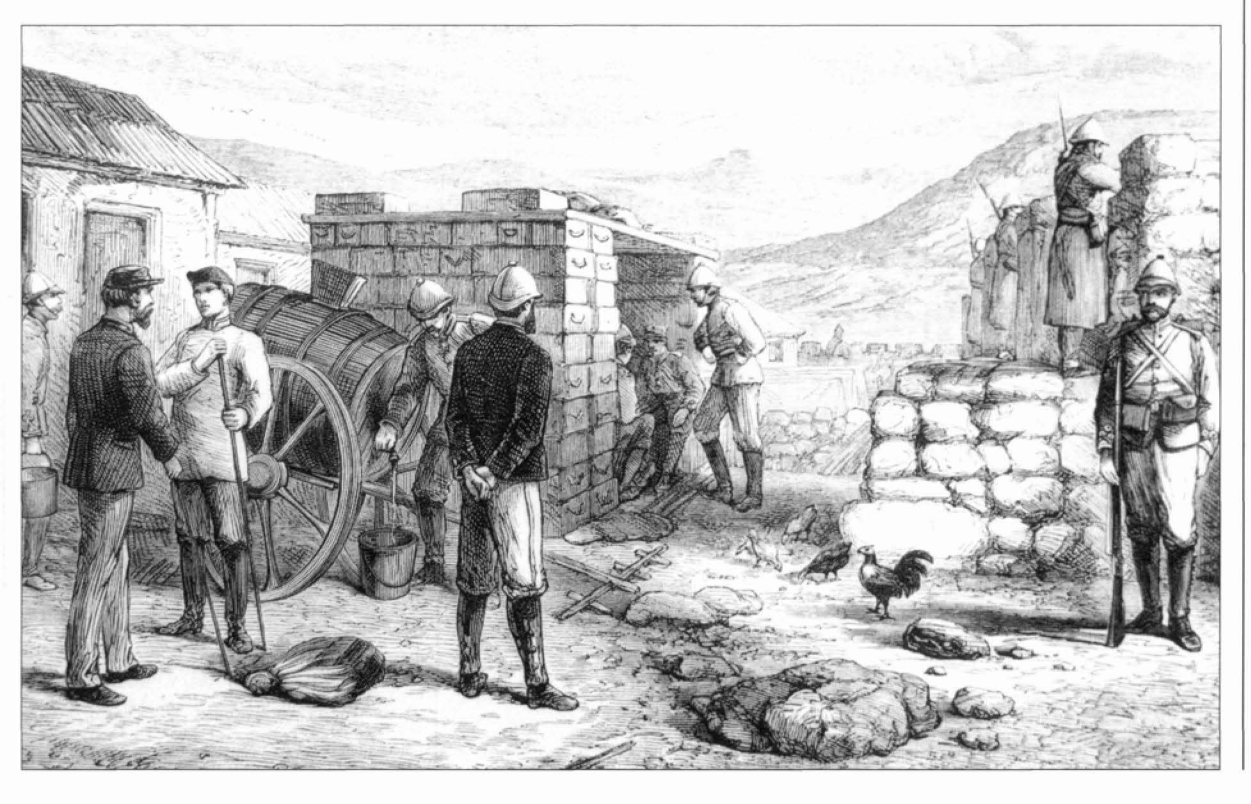
stood up in. As these became worn, men resorted to cutting holes in the ends and sides of mealie sacks, and wearing them as makeshift greatcoats. The weather remained bad, and the area around both forts soon became a sea of mud, although at Rorke's Drift B Company were accorded the honour of sleeping under the eaves of the storehouse, protected by the tarpaulins. The general bad smell produced by too many human bodies in close proximity, and by the rotting sacks of provisions, was exacerbated at Rorke's Drift by the number of unburied Zulu corpses which lay undiscovered in the long grass or hidden in crannies and hollows, and which decomposed rapidly. Moreover, those who had survived the battles – and even those of Chelmsford's command who had seen too much of Isandlwana on the night of the 22nd – were suffering the effects of trauma, and disturbed the sleep of the garrisons at night by crying out in their sleep. The fear of a sudden Zulu attack was very real, and false alarms at night were common. Africans found in the vicinity of either camp who could not account for themselves were shot as spies.

Fort Melvill

By March, it was clear that this situation could not prevail indefinitely, and the Engineers were ordered to construct a new fort closer to the river, which would both house the garrison and protect the Drift itself. This fort was initially known to the men as Fort Revenge – for Isandlwana – but Lord Chelmsford was uncomfortable with the association, and the name was changed to Fort Melvill, after Lt. Teignmouth Melvill of the 1/24th, who had been killed at Isandlwana, attempting to save the Queen's Colour of his battalion.

Fort Melvill was the first purpose-built work constructed directly on the central border on a site selected specifically for defence (all the others having been hastily erected to protect existing supply dumps). It was on rising ground a few yards above the road, and directly overlooked the pool where the ponts were anchored. In plan it was an oblong with projecting bastions at the corners, and it followed the usual design of an outer trench with walls inside.

The interior of Fort Melvill, showing the stone banquette, right, and the huts erected to shelter both officers and men, left. In the centre is an improvised shelter made of ammunition boxes, and roofed with planks – a feature of many such forts in Zululand.





The remains of Fort Melvill today; the ditches and crumbled stone walls, now overgrown, can be seen on the left. The fort's commanding position relative to the river is obvious.

The walls were partially made of brick – some of which may have been cut and sun-dried for the purpose – and partially of stone. Rows of aloes – which have thick, spiky leaves – were planted around the post to serve as an abattis, and discarded bottles were thrown into the trenches and smashed. The fort was largely completed by early April, and the garrison at the mission station began to move down to occupy it. As a refinement, the side nearest the river was covered over to provide sleeping quarters for both officers and men. Although the old garrison from the mission were at first delighted to be free of the conditions which prevailed there, a few grumbled later that Fort Melvill was far from ideal either, being unsuited to prolonged occupation by large numbers of troops, and plagued by damp.

By April, the tension along the border had largely dissipated in any case. The renewed fighting at the end of March had moved the focus of the war to the northern and coastal sectors, and had left the British decidedly in the ascendant.

The first invasion: the Northern Column

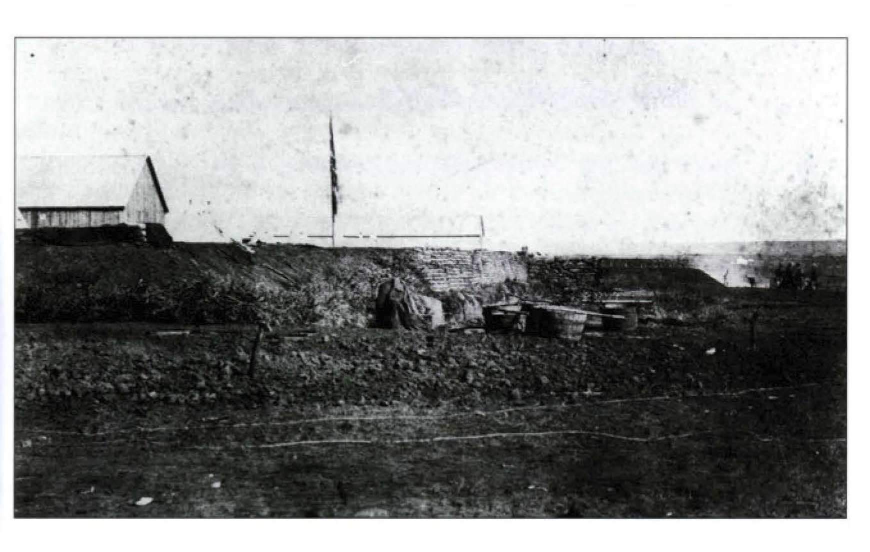
Col. Wood's Left Flank Column established their first camp in Zululand in January overlooking the White Mfolozi River within sight of a distinctive hill known as Thinta's Kop. It may be that Wood intended this to be a permanent post on the lines of communication, and between 19 and 21 January his command built a work to protect it. Known as Fort Thinta, this was a simple stone structure, rather like the civilian laagers, and no more than 30 yards square. It was never intended to contain the entire column, but rather to serve as a bastion against which to anchor the infantry deployment. From Fort Thinta, Wood made a number of forays against local Zulu concentrations around the Zungwini and Hlobane mountains; on 24 January, while skirmishing in this area, he received the first news of Isandlwana.

The destruction of the Centre Column left Wood as every bit unsupported as Pearson on the coast, and, concerned for the safety of the civilian settlements along the Transvaal border behind him, Wood decided to shift his position a few miles north-west to a more commanding site on the Khambula ridge.

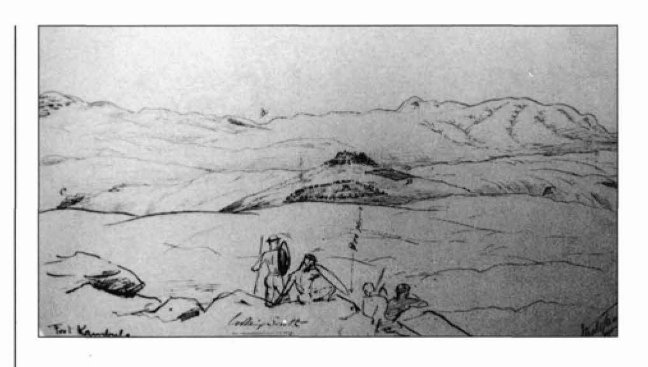
Camp Khambula

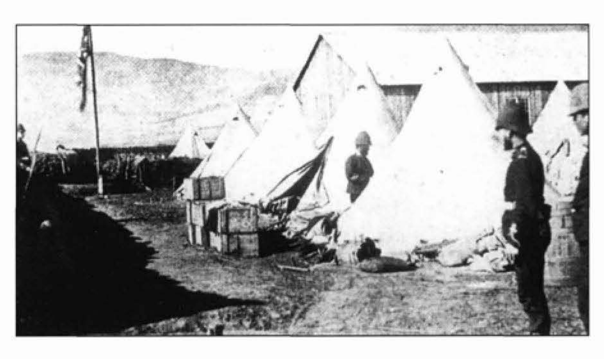
The camp at Khambula would remain Wood's base for several months, and the exact position was shifted several times for sanitary reasons. From the time he arrived, Wood obviously shared the prevailing opinion that his camp might be attacked, and while he chose not to build the complex structures Wynne had supervised on the coast, he nonetheless ensured that each of his camps was protected by wagon laagers and some sort of earthwork redoubt.

By mid-February Wood had occupied the best defensive position on the ridge, a spot that was destined to play a decisive role in the war. The ground itself lay greatly in Wood's favour; to the north, it fell away gently across an open slope towards the streams that made up the headwaters of the White Mfolozi, a mile away. To the south, however, it dropped in two or three terraces into a much steeper valley, which was broken at the bottom by marshy ground and bush. In the centre of the ridge was a narrow knoll with a steep approach across the last few yards on three sides of the summit. Wood used this knoll as a natural bastion, and improved its defensive potential by building a redoubt



The military fort at Utrecht, on the Transvaal/Zulu border. This fort had been built as early as December 1877, when British troops mounted an abortive campaign against King Sekhukhune of the Pedi. Throughout the Anglo-Zulu War, it served as a supply depot for Wood's base at Khambula. The fort was a typical earthwork, and was built close to the stone civilian laager.





TOP LEFT Wood's camp at Khambula, looking eastwards. Wood occupied the Khambula ridge in late January, and in mid February shifted to this commanding position. The redoubt is on the knoll in the centre of the picture, with the main laager in the foreground, and the cattle laager to the right. This was the position attacked by the Zulu army on 29 March. (Sherwood Foresters' Museum, Nottingham Castle)

TOP RIGHT The interior of the fort at Utrecht, with men of the 80th Regiment in the foreground. Note the shed built to house the inevitable stockpile of supplies. (Anglo-Zulu War Historical Society)

along the top. This was small – only about 30 yards long by less than 10 wide – but it was large enough to shelter two field guns and about 100 men. In shape it was oblong, widening somewhat at the eastern end, and shaped to a point. As usual it consisted of an outer trench with dislodged stones and earth piled up to form the rampart. Contemporary sketches suggest that it was a formidable structure, but there are no references to raised platforms being constructed for the artillery, so it was probably in fact about shoulder high.

Wood placed his camp about this redoubt to provide several points of overlapping and mutually supportive fire. A large wagon laager was built on open ground about 300 yards west of the redoubt. The wagons were arranged end-to-end and chained together, and a shallow ditch cut around the outside. The sods were piled up beneath the wagons, which were further barricaded with mealie sacks. Unlike Chelmsford's laager at Gingindlovu, there was no gap between the rampart and the wagons for the men to occupy; they knelt down under the wagons themselves, behind the low ramparts, or in the wagon beds. On a terrace immediately below the redoubt, just 100 yards away, Wood constructed a second entrenched laager, to hold the column's cattle during an attack. This was linked to the redoubt by a palisade, made by cutting a narrow trench and pushing into it roughly-cut planks to form a hedge above head height. Although not sturdy enough to prevent a determined press of men from trampling it down, it was enough to hamper enemy movement between the cattle kraal and the redoubt, and to serve as an abattis, holding up an attack within almost point-blank range of the defenders.

In an attempt to keep the site sanitary, the troops erected their camp outside the works, immediately south of the main laager, while Wood's African auxiliaries built temporary huts on a spur nearby. The livestock were driven into the cattle laager each night, but the ground was regularly cleared of manure, which was deposited on a rubbish heap 500 yards away to the west.

The battle of Khambula

From his base at Khambula Wood regularly harassed local Zulu loyalists, with the result that when, in mid March, King Cetshwayo re-assembled his army, he directed it to attack Wood's position. Well aware of the British build up underway on the borders, and unable to oust Pearson from his fortifications at Eshowe, he directed instead that the army should now try to dislodge Wood at Khambula.

Although the king did not accompany the army in person, he nonetheless gave his commanders specific instructions that reveal the extent to which the army's impotence in the face of fortifications had already entered the Zulu psyche. The army, he told them, was to make whatever feints it could to draw the British out from their positions so that it could destroy them in the open, as it had at Isandlwana; on no account was it to attack 'strongholds'. Sadly for the future of the kingdom, the izinduna found it impossible to adhere to this advice.

The Zulu army reached the area near Khambula on 28 March, and began the struggle with an unexpected victory. Wood's cavalry detachments had that day mounted a raid on the Hlobane mountain; arriving in time to catch them

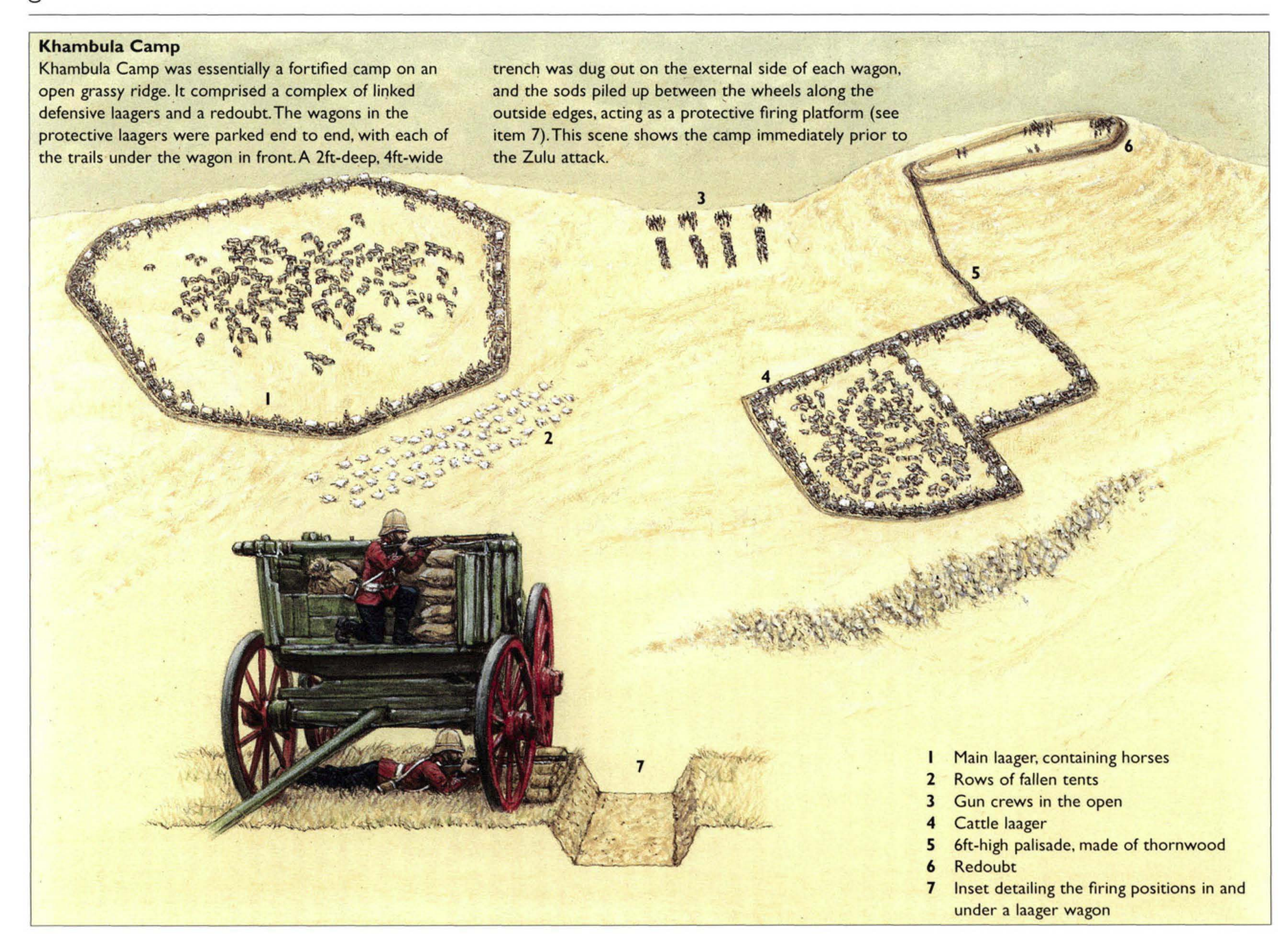
scattered and a long way from their base, the main Zulu army easily routed them. Yet this victory instilled in the warriors a fatal over-confidence and enthusiasm, while at the same time giving Wood warning of the army's approach. As a result the outcome of the battle of Khambula would be very different.

The battle, which began at noon the following day (29 March),was both the most fiercely contested struggle of the war, and proof of the overwhelming advantages afforded the British by their fortifications. The Zulu approach was visible across several miles of difficult country, allowing Wood ample time to prepare his position. The tents outside the laager were struck, the men allotted their places, and ammunition boxes opened in readiness. Six field guns were placed in the open on the slopes between the main laager and the redoubt, an exposed position that nonetheless allowed them free room to manoeuvre to face the Zulu attacks as they developed.

Despite the king's instructions, the young men who made up the bulk of the Zulu regiments, buoyed up by their success the day before, had little time for complex strategies, and were keen to attack the camp directly. Unable, and perhaps unwilling, to restrain them, the commanders deployed them in their classic encircling formation, the right flank, or 'horn', swinging round to the north of the camp, the centre, or 'chest', moving up the far end of the ridge to the east, and the left 'horn' moving into the steeper valley to the south. Seeing them deploy, Wood confessed afterwards that he feared he had insufficient men to counter an attack on all sides, but in the event the left 'horn' became bogged down in the marshy valley bottom, so that the right 'horn' was in position before the rest of the army was in place. Realising this, Wood sent his mounted men to harry the Zulu right into making an unsupported attack.

That first attack lost the Zulu the battle – and arguably the war. Rushing forward across the open slope, the Zulu were exposed to a storm of fire from the northern face of the main laager and redoubt. A few determined elements reached the wagons only to find there was no way in; the majority stalled and took what cover they could behind the low anthills that scattered the slope. After holding this position with great determination, they abandoned the attack and retired to the cover of a rocky outcrop further east. The sound of this assault brought the left 'horn' hurrying to the attack, however, emerging from the dead ground at the head of the valley just two or three hundred yards from the cattle laager. Once again, a few warriors struggled to fight a way into the cattle laager but were frustrated by the barricades. The rest suffered terribly from close-range rifle fire and from the guns, which had turned to face them, and retired back down into the shelter of the valley.

The rest of the battle consisted of a brutal slogging match in which the Zulus sought continually to regain their co-ordination, and Wood sought to frustrate them. Both 'horns' made further assaults, only to be driven back each time, while the 'chest', advancing towards the narrow eastern end of the redoubt, charged close enough for several Zulu to fall dead at the foot of the ramparts before being driven back. At one point, the limitations of Wood's unsophisticated fortifications were almost exposed by Zulu marksmanship, which had improved since Isandlwana by the capture of nearly 1,000 British Martini-Henry rifles. Elements of the left 'horn' occupied the camp rubbish heap, which was not only crowned with a luxuriant growth of grass and mealies, but which overlooked the cattle laager. Enfilading fire from this position struck down among the defenders of the laager forcing them to withdraw, and allowing the Zulu to occupy it. Moreover, when Wood sent a sortie into the open, to disperse Zulu assembling in the dead ground to the south, fire from the rubbish dump soon forced the British to withdraw to the safety of the wagons. Nevertheless, for the most part the entrenched wagons, and in particular the redoubt, proved more than adequate protection against Zulu fire. For all that one officer recalled that the Zulu bullets struck down 'like hail', casualties within were light.



Khambula Camp

Khambula Camp was essentially a fortified camp on an open grassy ridge. It comprised a complex of linked defensive laagers and a redoubt. The wagons in the protective laagers were parked end to end, with each of the trails under the wagon in front. A 2ft-deep, 4ft-wide trench was dug out on the external side of each wagon, and the sods piled up between the wheels along the outside edges, acting as a protective firing platform (see item 7). This scene shows the camp immediately prior to the Zulu attack.

1 Main laager, containing horses
2 Rows of fallen tents
3 Gun crews in the open
4 Cattle laager
5 6ft-high palisade, made of thornwood
6 Redoubt
7 Inset detailing the firing positions in and under a laager wagon



The final stage of the battle of Khambula, 29 March 1879. The redoubt is in the centre, with the main laager left, and the cattle laager right. A company of the 1/13th is driving the Zulu left horn back into the valley to the south of the position; note the gun teams in the open, behind. (Taunton Museum)

After about four hours, the Zulu were becoming exhausted, and Wood went onto the offensive. Companies were despatched from the main laager to recapture the cattle laager and to drive the Zulu left back into the valley to the south, and once the Zulu began to withdraw, Wood sent his mounted detachments to pursue them. Exacting revenge for the Hlobane debacle the day before, they chased the Zulu across several miles of country, cutting down hundreds who were too tired to resist. When it was over, the British had just three officers and 25 men killed; in contrast, 785 Zulu bodies were dragged away from around the camp, and hundreds more lay out on the line of retreat.

The Zulu had not lost the battle through lack of courage or skill. Despite the advantages of the British position, they had reached at different points both the main laager and the redoubt, and had for a time captured the cattle laager. Nevertheless, they had remained throughout desperately exposed to the curtains of fire laid down around the British position and as a result, as at Rorke's Drift, had been unable to exploit their numbers to force an entry through the barricades. The heavy losses endured at Khambula dispelled something of the confidence which had prevailed among the Zulu since Isandlwana, and were exacerbated by the further defeat of the forces concentrated near Eshowe a few days later.

By the end of the first week of April 1879, the war had turned decisively in favour of the British, and the role of fortifications in that turn had been decisive.

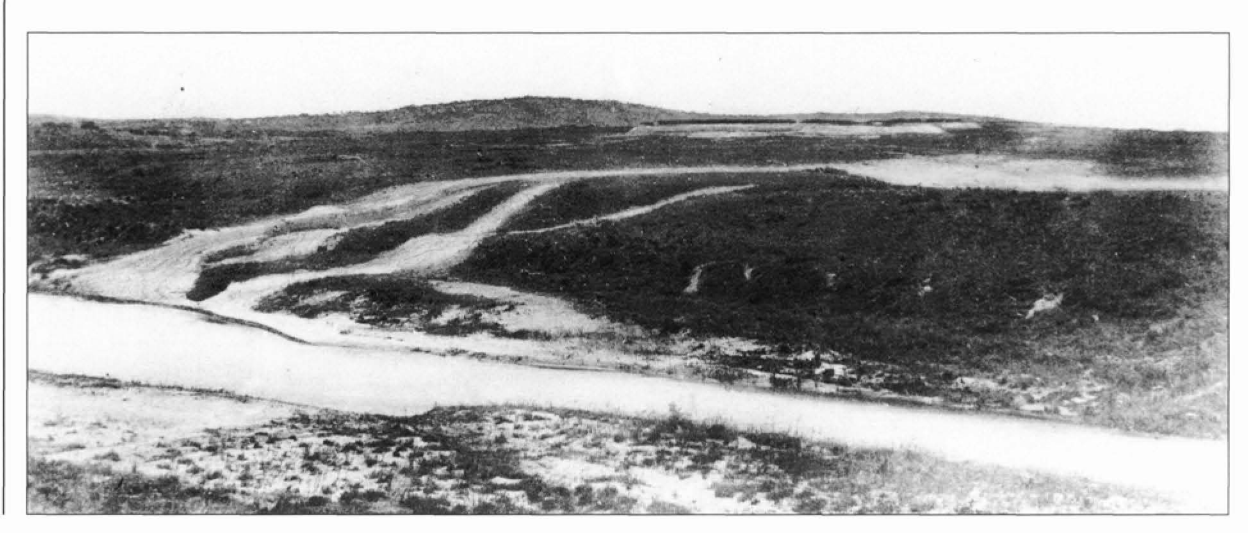
The second invasion; the war of fortification

The victories at Khambula and Gingindlovu checked the Zulu ascendancy that had prevailed since Isandlwana. Strategically, Lord Chelmsford had gained little since the invasion of January – his columns remained close to the borders – but the steady stream of reinforcements flowing through Durban had immeasurably strengthened his hand. Throughout May he prepared a new plan of invasion. One column, made up of Pearson's old command and the Eshowe Relief Column, combined and re-designated the 1st Division, would use the complex at forts Pearson and Tenedos, and an advance post maintained at Gingindlovu, as a base. They were to then advance up the coast, keeping seaward of Eshowe, and hopefully establish a beachhead on the Zululand coast to receive supplies by sea. An entirely new column, the 2nd Division, would cross into Zululand north of Rorke's Drift and, by-passing the battlefield, join the old projected line of advance of the Centre Column beyond Isandlwana. This column would rendezvous with Wood's column – now re-designated the Flying Column – and the two would advance in tandem and fight as a single unit.

The easy confidence that had prevailed before Isandlwana had long gone, and indeed a nervousness prevailed among the troops fresh out from England, which would lead to frequent false alarms. As a result, Chelmsford now placed great emphasis in his Standing Orders on the need to protect every halt on the line of march. As a result, the second invasion became – to a far greater extent than before – a war of fortification.

The 1st Division; forts Crealock, Chelmsford, Napoleon, Richards and Argyll

This was particularly true in the coastal sector. The victory at Gingindlovu had severely undermined the ability of the Zulu in that area to resist, and Chelmsford's orders reflected the fact that the 1st Division's role was largely as an army of occupation. It was to ensure that no further resistance emerged by destroying Zulu royal homesteads which might serve as a rallying point, and establishing strong bases which would serve both as supply depots and to intimidate the local population.



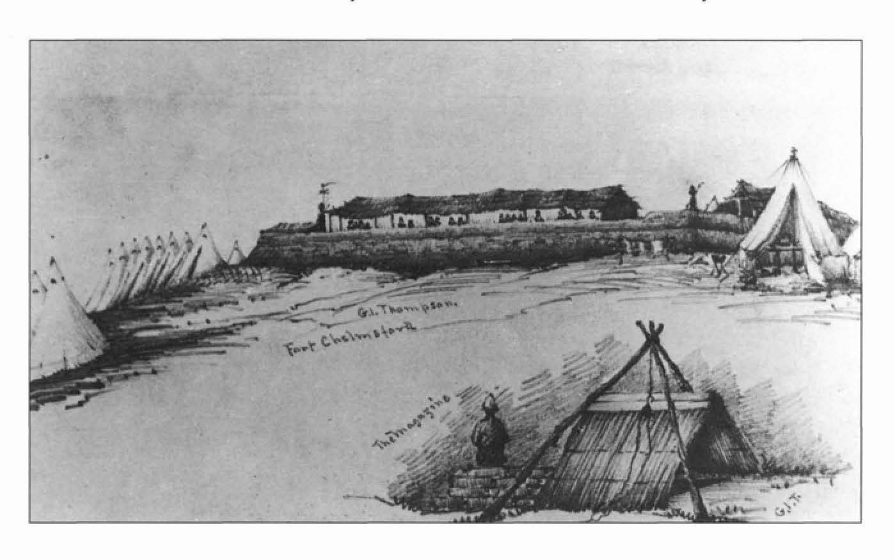
The drift over the amaTigulu River with the low profile of Fort Crealock on the horizon. Fort Crealock was one of a number of fortified depots built by the 1st Division; the damage wrought by the passage of frequent wagon convoys is obvious in the foreground.



A distant view of Fort Chelmsford, another of the 1st Division's depots in the coastal sector. The fort is under construction here; the wooden frames of the sheds, which were a feature of the site, are just visible on the skyline. A feature of Fort Chelmsford was a deep trench running down to the nearby River Nyezane, built either to protect watering parties, or for drainage; construction of this feature is in progress on the right.

The 1st Division began its forward move on 21 April, long before the 2nd Division had been assembled upcountry. Ironically, the very size of the 1st Division – nearly 5,000 white and 2,000 black troops – which made it so formidable, also hampered its ability to advance. By now, the burgeoning Army demand for transport wagons had outstripped what colonial Natal could willingly supply, and the resulting shortage was felt mainly on the coast. With too few wagons to orchestrate a general advance, Maj. Gen. Henry Crealock opted instead to establish his posts first, then forward supplies in a series of convoys afterwards. Work on the first supply depot began on 23 June, on the far side of the drift of the amaTigulu River, and it was called Fort Crealock, after the commanding officer. Once that was secure, Fort Chelmsford, commanding the crossing of the Nyezane River, was begun on 29 June; Fort Napoleon, overlooking the Mlalazi River, was begun on 25 June; Fort Richards was built on 1 July to command the shore above the chosen landing point at Port Durnford; and Fort Argyll, an advanced post, was built in late August on the Mhlatuze. Not until forts Crealock, Chelmsford and Napoleon were largely complete did the general advance from the Thukela begin.

The 1st Division was destined never to be attacked, and its war consisted largely of endless convoy duty, of escorting full wagons up the line and empty ones back. Where the convoys could not march comfortably between the



A sketch of Fort Chelmsford with details of the magazine; note that most of the men are camped outside the fort itself. (Killie Campbell Collections, Durban)

major posts in a day, temporary march laagers were constructed, remembered, if at all, with names like Dunn's Laager or Walker's Laager. The usual method was simply to park the wagons *en echelon* and entrench them. The unpredictable weather meant that the tracks were soon turned to mud, and the corpses of oxen – worked to death by the heavy loads – littered the roadside. As a result, a general air of discomfort and sickness prevailed among the camps, exacerbated by a sense of frustration at the slow progress of the campaign. At Fort Chelmsford, in particular, there was a debilitating outbreak of disease. Life in the forts remained no more comfortable than it had throughout the war.

Today, this area of Zululand is heavily cultivated with sugarcane, and many of the remains of the coastal forts have been obliterated. This, together with a lack of detailed contemporary descriptions, means that it is difficult to be precise about the construction, although in general terms in each case the forts were earthworks with the usual combination of trenches and ramparts. A notable exception is Fort Crealock, whose broadly square profile, with a projecting angle on the north side, was complemented by a sophisticated bastion on the south-west corner, which enabled flanking fire to be directed down the western and southern walls, and by a ravelin – a V-shaped bastion with its base on the main wall – on the eastern side. The interior was protected from crossfire by a single traverse, while an abattis of felled trees and bush was constructed outside the perimeter. Despite its careful construction, however, Fort Crealock suffered from the light, sandy soil, which crumbled easily, blew away in high wind, or washed away in the rain.

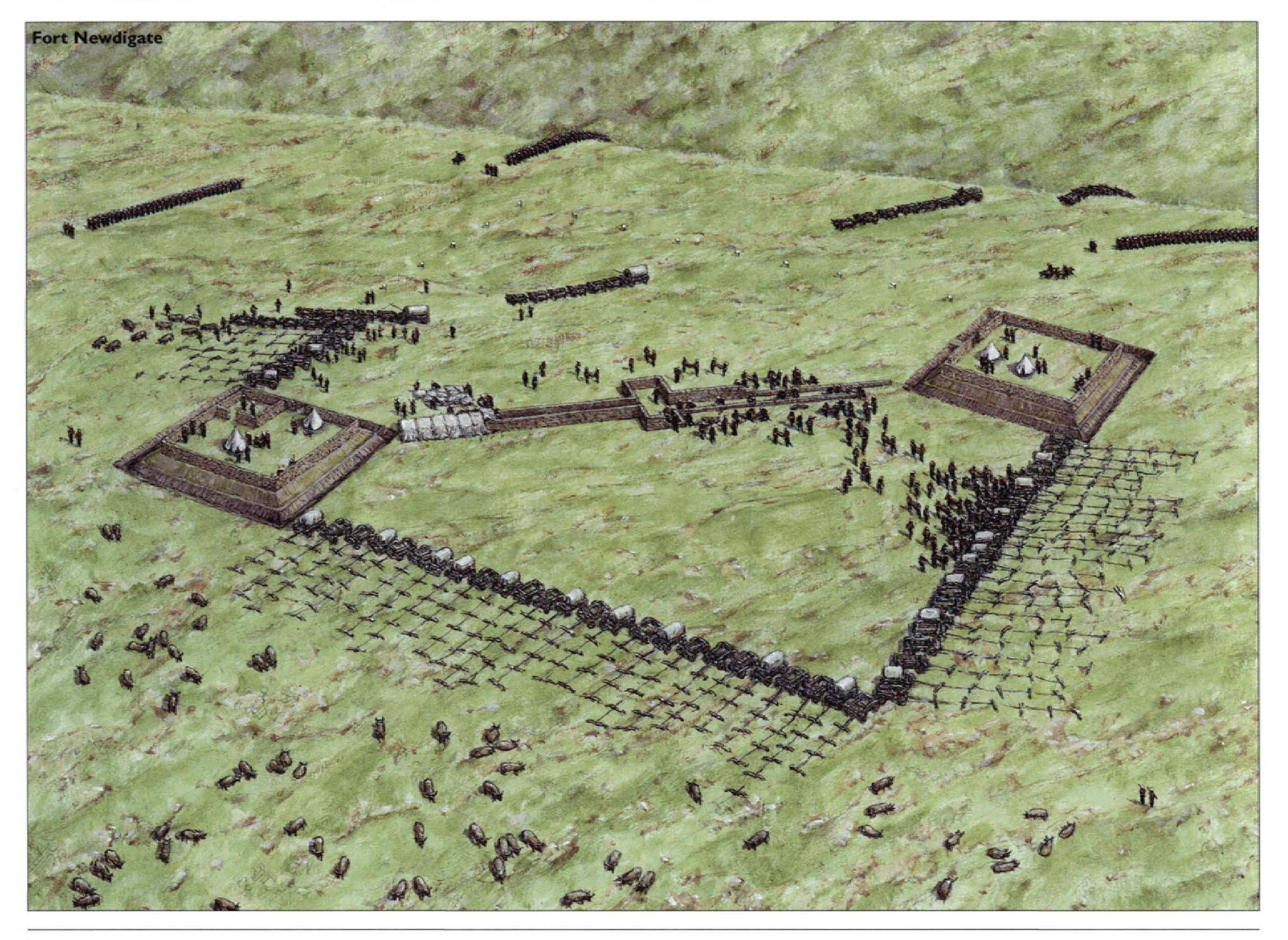
The shape of Fort Chelmsford is not discernible in contemporary illustrations, but it was probably broadly similar, but without such a sophisticated bastion. Here the soil was a heavy red clay, and stone was obtained from a cutting nearby, with the result that Fort Chelmsford apparently boasted a fully revetted rampart with a banquette of stone and an underground magazine screened by an improvised thatch roof. Two distinctive features of the site were a covered gallery, to protect supplies, made from a framework of saplings covered with grass mats, and a cutting which ran down to the nearby Nyezane River. Whether this was to provide a sheltered access for watering parties or for drainage – Fort Chelmsford was notoriously wet, due to the clay – or both remains unclear. At Fort Napoleon, a wooden bridge was constructed across the Mlalazi River, while the earthwork itself was largely square in design.

The 2nd Division and Flying Column; forts Whitehead, Newdigate, Marshall, Evelyn and Nolela

The designated point of assembly for the new 2nd Division was Landman's Drift on the Mzinyathi River, some 15 miles north of Rorke's Drift, and throughout April a large quantity of supplies was accumulated there to feed the troops. In May a work was built to protect them, which in many ways established a pattern for later posts built along the line of march all the way to

Fort Newdigate

Fort Newdigate, constructed during the Second Invasion, consists of two redoubts some 50 yards apart. Both are 20 yards square, and feature an internal dry stone wall protected by a 6ft-deep, 6ft-wide ditch. The redoubt on the left has a small, square redoubt in one corner. The arrival of a wagon convoy is transforming these redoubts into a much larger defensive structure. The wagons are parked to form a diamond-shaped fortification, and the first 'walls' have been completed, nearest to the viewer. The wagons are parked *en echelon*, according to positions marked out with white flags, with their cattle-traces extended in front of them to form abattis. The oxen have been turned out to graze, watched over by sentries. Once in position, the stores within each wagon are unloaded, and the boxes and sacks are being taken to build a covered walkway between the two forts. This 6ft-high passage will be covered over with tarpaulins, and features a square room in the centre.


Fort Newdigate

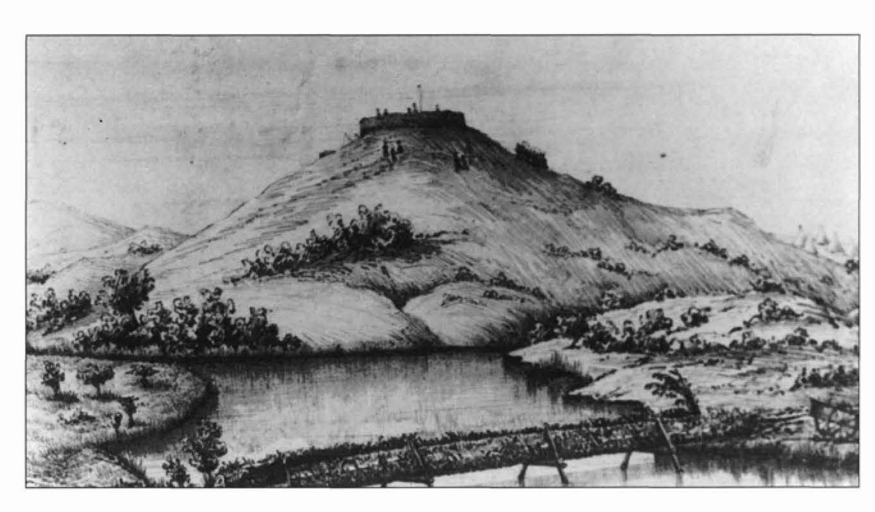


The interior of Fort Chelmsford after its abandonment at the end of the war; note the sheds built to protect the stores.

oNdini. It consisted of two redoubts, built in this case several hundred yards apart, which served to protect either end of the camp area. The engineering was no more complex than elsewhere in Zululand; both consisted simply of outlying trenches and inner ramparts, and while one redoubt was merely oblong in profile, the other was shaped like a diamond, with projecting bastions at two opposite corners.

From Landman's Drift the column moved forward to the border, the Ncome (Blood) River, and finally crossed into Zulu territory on 1 June. At the same time, Wood's Flying Column advanced from Khambula, and the two met in the valley of the Tshotshozi on 2 June. Both columns then moved slowly south towards Babanango mountain, then turned east along the high ground towards Mthonjaneni before finally descending into the valley of the White Mfolozi at the end of June. By this time, it was clear that the Zulu lacked the capacity to mount more than one further determined act of resistance, and indeed King Cetshwayo had decided to assemble his army at oNdini and to wait for the British to arrive. Nonetheless, the advance was carried out in the face of constant skirmishing from small parties of Zulu who had been left to guard huts and crops. Moreover, the heavy baggage train necessary to support the columns in the field restricted the speed of the British advance, and tied up large numbers of troops guarding the lines of communication.

At each stage of the advance, forts were built to protect the passing wagon convoys. At Koppie Alleen, on the Ncome, men of the 58th Regiment built Fort Whitehead at the end of May. Like the fort at Landman's Drift, it consisted of two earthwork redoubts. On 6 June Fort Newdigate was built overlooking the



A view of Fort Napoleon, the 1st Division's post on the Mlalazi River. Note the bridge in the foreground constructed by the troops on an 'A-frame' of wooden supports, with sides screened by brushwood. (Killie Campbell Collections, Durban)

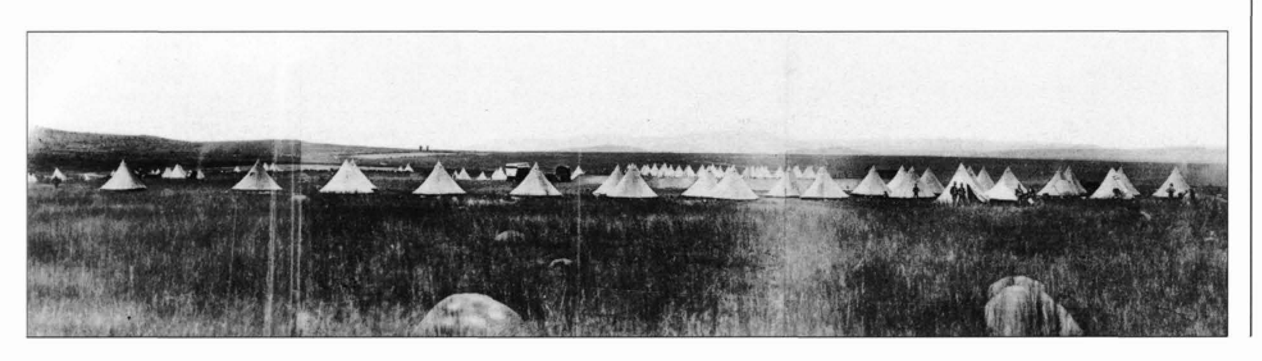
Nondweni River; on 18 June Fort Marshall, not far from Siphezi mountain, was built; on 22 June Fort Evelyn was constructed; and finally, on 2 July, on the very eve of victory, Fort Nolela, on the banks of the White Mfolozi was completed.

In each case, these forts were far too small to contain the numbers of troops in the columns, but they were intended as strongpoints, and the camps were placed around them. Once the columns advanced, the forts were left with a small garrison – usually one or two companies of infantry – to guard the supply convoys that passed regularly back and forth.

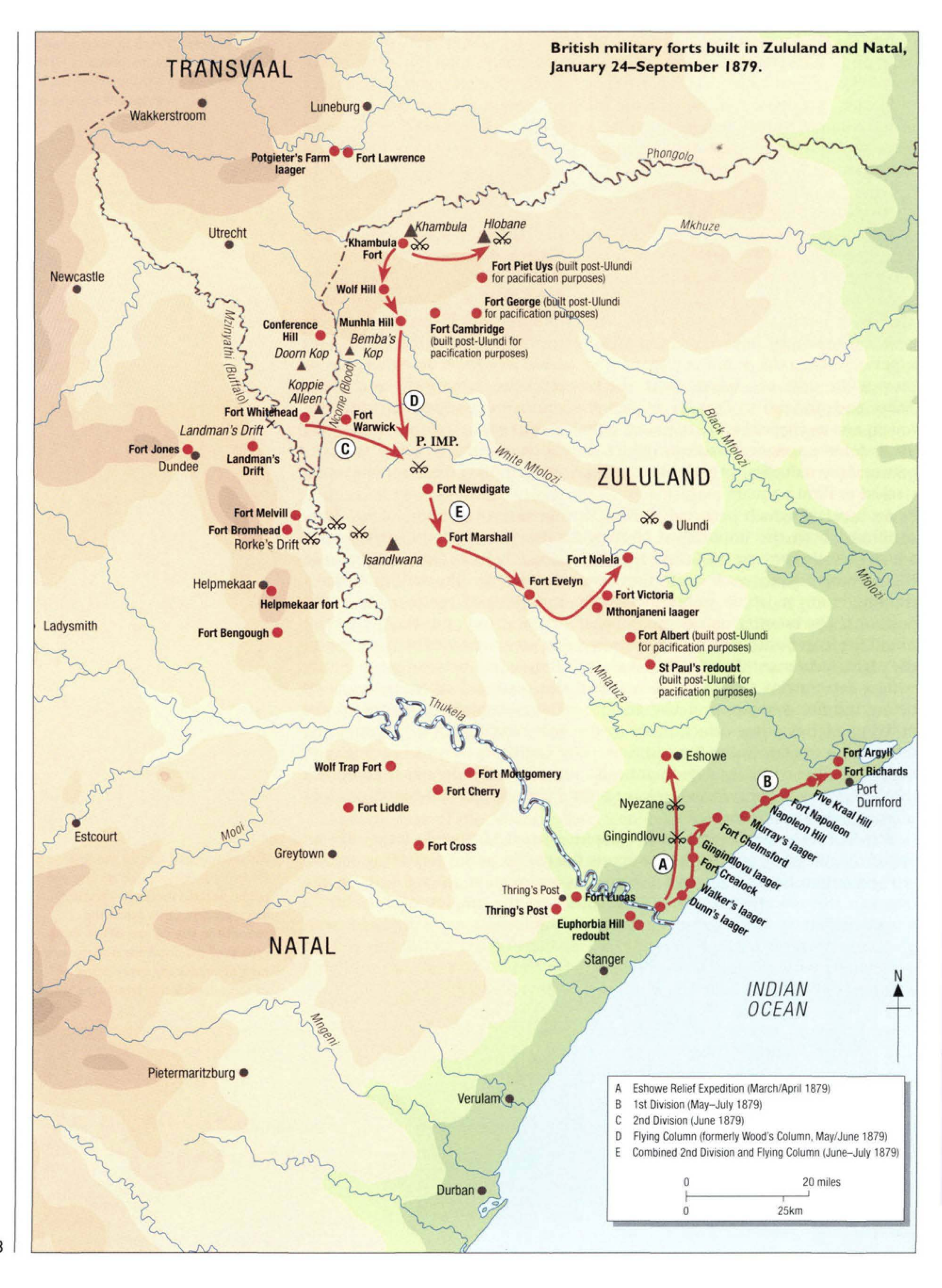
No two of these forts were exactly the same, though they followed similar principles, adapted in each case to the lie of the land and conditioned by the time available. Fort Newdigate followed the established pattern of building two small redoubts, in this case about 50 yards apart. Both seem to have been small square works, each face only about 10 yards long, and consisting of an outer ditch with a rampart of stones inside. A description of Fort Newdigate suggests how the system of linked redoubts was intended to work; when convoys of supplies reached the post, the wagons were parked *en echelon* on either side, to provide the sides of a square, with the two redoubts forming the anchors at either end. Indeed, at Fort Newdigate the commander added an inventive touch, and as the sacks and boxes of supplies were unpacked they were piled up to form a screened walkway, which extended diagonally across the post between the redoubts. In the very centre of the complex, these supplies were stacked to form a square magazine.

An incident which occurred at Fort Newdigate on the night of 6/7 June confirmed both the importance of such fortifications and the nervousness which prevailed among the British troops, particularly those fresh out from the UK. An outlying picquet thought they saw movements in the dark, and fired a warning shot, at which point the whole camp rushed to man the alarm positions. The infantry on one side opened fire, and soon fire was general all round the laager, with one artillery battery firing several rounds of canister into the night. Lieutenant Chard – of Rorke's Drift fame – had been on picquet duty with a detachment of Engineers, and had not managed to enter the camp before the firing began, and had to throw themselves down in one of the outlying ditches. Some detachments fired wildly, sending volleys through the tents of the wagons lining the perimeter. The Engineers lay there throughout, with the bullets whistling over their heads. When at last order was restored and the firing ceased, it was found to have been a false alarm. Fort Newdigate was promptly christened 'Fort Funk'.

Fort Marshall was a rather more complex-shaped earthwork, rather like an angular 'figure of 8', with a traverse across the centre, and a projecting bastion at the southernmost angle. Fort Evelyn was an irregular oblong built on the edge of a steep escarpment, while Fort Nolela was the simplest of them all – a simple redoubt of stones piled shoulder high, broadly oblong in shape, with one corner pushed back at an angle. It was built on a rocky knoll so as to command two wagon laagers – one each for the 2nd Division and Flying Column – which were built below it down to the river bank.



An unidentified fort of the 2nd Division photographed on the eve of the second invasion – possibly at Landman's Drift. Note the redoubt in the centre of the camp, typical of the small forts that were built at practically every stage of the advance this late in the war.



British military forts built in Zululand and Natal, January 24–September 1879.
TRANSVAAL
Wakkerstroom
Luneburg
Potgieter's Farm laager
Fort Lawrence
Phongolo
Utrecht
Newcastle
Khambula
Hlobane
Khambula Fort
Mkhuze
Fort Piet Uys (built post-Ulundi for pacification purposes)
Wolf Hill
Fort George (built post-Ulundi for pacification purposes)
Munhla Hill
Conference Hill
Bemba's Kop
Doorn Kop
Fort Cambridge (built post-Ulundi for pacification purposes)
Mzinyathi (Buffalo)
Ncome (Blood)
Koppie Alleen
Fort Whitehead
Fort Warwick
Landman's Drift
P. IMP.
Fort Jones
Dundee
Landman's Drift
White Mfolozi
Black Mfolozi
ZULULAND
Fort Newdigate
Fort Melvill
Fort Bromhead
Rorke's Drift
Isandlwana
Fort Marshall
Ulundi
Fort Nolela
Fort Evelyn
Helpmekaar
Helpmekaar fort
Fort Victoria
Mthonjaneni laager
Ladysmith
Fort Bengough
Fort Albert (built post-Ulundi for pacification purposes)
St Paul's redoubt (built post-Ulundi for pacification purposes)
Mfolozi
Mhlatuze
Thukela
Eshowe
Fort Argyll
Fort Richards
Port Durnford
Wolf Trap Fort
Fort Montgomery
Fort Cherry
Fort Liddle
Nyezane
Five Kraal Hill
Fort Napoleon
Napoleon Hill
Murray's laager
Fort Chelmsford
Gingindlovu
Gingindlovu laager
Fort Crealock
Walker's laager
Dunn's laager
Estcourt
Mooi
Greytown
Fort Cross
Thring's Post
Fort Lucas
Thring's Post
Euphorbia Hill redoubt
NATAL
Stanger
INDIAN OCEAN
N
Mngeni
Pietermaritzburg
Verulam
Durban
A Eshowe Relief Expedition (March/April 1879)
B 1st Division (May–July 1879)
C 2nd Division (June 1879)
D Flying Column (formerly Wood's Column, May/June 1879)
E Combined 2nd Division and Flying Column (June–July 1879)
0 20 miles
0 25km

The final battle

The final battle of the war took place on the plain close to oNdini (known to the British as Ulundi) on 4 July. Leaving his baggage wagons at Fort Nolela under guard, Chelmsford crossed the White Mfolozi with over 5,000 men, including six artillery batteries and a regular cavalry regiment. He formed up in a square, four deep on each side, and manoeuvred onto a grassy rise a mile and a half from oNdini itself. The men from the Flying Column – veterans of Khambula, who made up two sides of the square – began to construct an entrenchment, but Chelmsford ordered them to stop. The habit of building forts at each temporary halt had led to criticism of Chelmsford being over-cautious where he had once been seen as too confident, while the Zulu still clung to the belief that the British could be defeated if only they fought in the open. To silence his critics and destroy any vestige of Zulu hopes, Chelmsford was determined that the only walls around his position would be a wall of troops. The cavalry, auxiliaries and ammunition carts were secured safely in the centre of the square.

The Zulu who had concentrated around oNdini in anticipation of his advance moved to surround the square, and began to attack at about 8.30 am. For 45 minutes they tried to find weak spots in the devastating wall of British fire, advancing in one place as close as ten yards from the lines before being driven back. Chelmsford's judgement had proved correct, however; so overwhelming was his firepower that the Zulu were just as incapable of forcing an entry through the lines as they had been at Rorke's Drift, Khambula or Gingindlovu. As their attacks faltered, Chelmsford ordered his cavalry out from the protection of the square, and a charge by the 17th Lancers drove the Zulus from the field. Over 1,500 Zulu were killed; Chelmsford lost just three officers and 10 men dead, and 69 wounded. Once the battle was over, Chelmsford's cavalry rode round the plain, setting fire to the royal homesteads, including oNdini itself.

The British remembered the battle by the name Ulundi. Ironically, given Chelmsford's determination not to employ entrenchments, the Zulu knew it for generations as Ocwecweni – 'the battle of the sheet-iron fort'. The sun glinting on the impressive rows of bayonets around the square had given the impression, from a distance, that it was protected by a screen of corrugated iron.

Pacification

The battle of Ulundi effectively broke up the Zulu army, and Lord Chelmsford promptly withdrew back across the White Mfolozi, and up onto the Mthonjaneni heights. But if the war was won, it was not quite over, for King Cetshwayo himself had not been captured, and some of his most loyal supporters refused to accept defeat until his fate was resolved. As a result, a number of forts were built in the closing weeks of the war, to protect the withdrawing columns, to serve as bases for parties sent out to hunt for the king, or intimidate chiefs who refused to surrender.

Visiting the forts today

The fortunes of the forts built by the British during the war of 1879 have been decidedly mixed. All of them were constructed as temporary works, intended to last for the duration of the campaign at best, and not to house a long-term army of occupation. Although one or two sites were later revived during Zululand's subsequent troubled history, most had been abandoned by September 1879, and left to the mercy of the elements. The degree to which they have survived has largely depended on the use to which the land was put following the opening of Zululand to white settlement at the end of the 19th century. Inland, white farmers found the land best suited to cattle ranching, and apart from the occasional appropriation of surviving stone walls to make cattle pens, this often had little impact on any surviving remains. In the coastal sector, however, both climate and soil were more suited to the intensive cultivation of sugarcane, a crop which requires frequent heavy ploughing, to the detriment of all but the most robust entrenchments.

For a century, however, many of the inland forts survived in a good state of preservation, although ironically some are now fast disappearing even as interest in their history grows. The proliferation of roads built to serve the rural African community since the 1990s has endangered some, while the increase in visitors, which has come with improved tourist facilities, has affected others. Anyone hoping to visit the sites should go armed with a copy of either *The Field Guide To The War In Zululand and the Defence of Natal 1879*, by John Laband and Paul Thompson (University of Natal Press, first published in 1979, and in revised form in 1983 and 1987), or the rather more glossy hardback equivalent, *The Illustrated Guide to the Anglo-Zulu War* (UNP, 2000), which exhaustively maps the sites. Visitors should, however, be aware that while public access to some sites is good, others are on private farmland, and the advice of a local guide is always advised, if only to prevent getting lost!

Of the forts featured most heavily in this book, Fort Pearson, at the Thukela mouth, is in a good state of preservation, with the trenches still visible and regularly cleared of bush. The grave of Captain Warren Wynne, who had such an impact on the engineering of the war, lies in a small cemetery in the Euphorbia Hill Redoubt nearby. A modern bridge now spans the river where Pearson once crossed, and Wynne's work at Fort Tenedos can only be reached along farm roads. While the trenches along part of the site remain, the remainder has been destroyed by ploughing. The site of the fort at Eshowe – now known as Fort KwaMondi, after the Zulu name for the Norwegian missionary, Ommund Oftebro – lies on the outskirts of the modern town. The site is in relatively good repair, with most of the perimeter ramparts and trenches still remaining, although the ramparts in one area have been destroyed by encroaching settlement, and the local heritage bodies struggle to keep the site free of bush. In 2000 a team from the University of Glasgow's archaeology department excavated the site. They found the foundations of the original church and some of the outbuildings – but also discovered that the interior of the fort had been used at a much later date as a cemetery by the local African population.

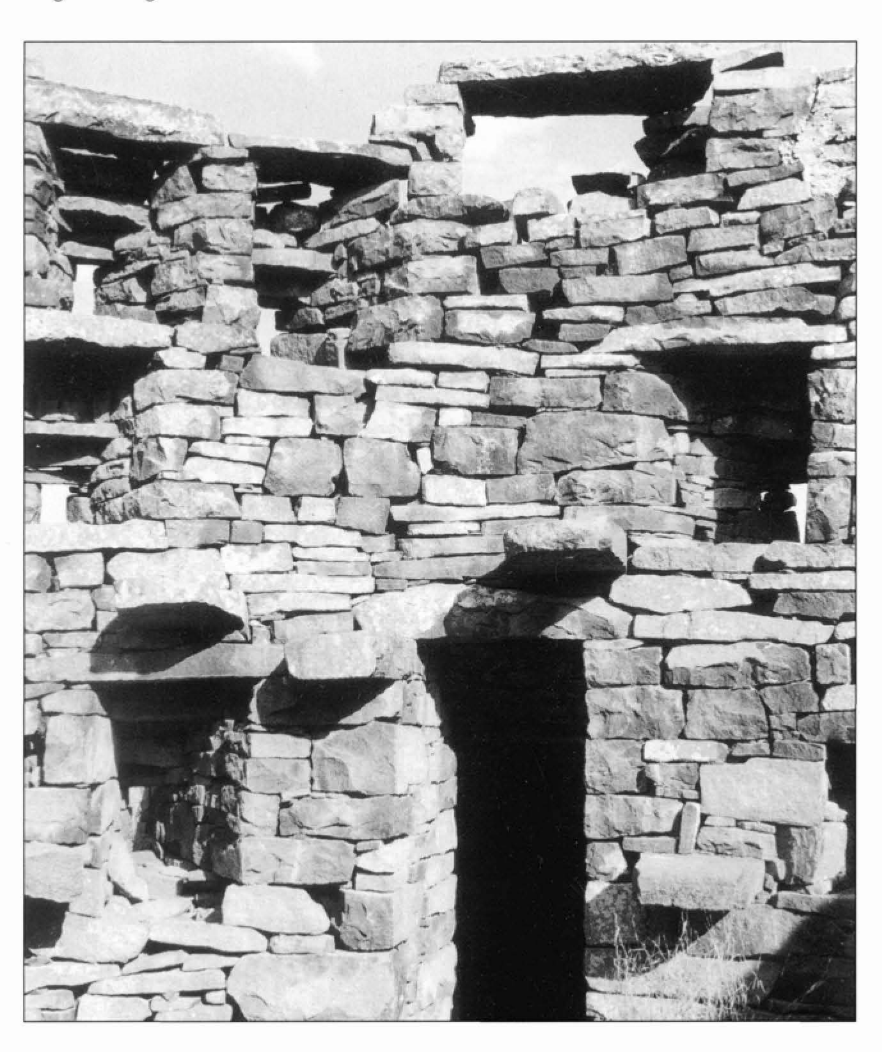
Of the 1st Division's principal depots, considerable traces of Fort Crealock have survived, but nothing whatsoever remains of Fort Chelmsford beyond a memorial beside the road to the troops who died there of disease.

Of the Centre Column's base at Helpmekaar, little remains but a faint trace in the ground, visible only when the grass is burnt in winter, and a small

military cemetery, which lies behind the modern police station. At Rorke's Drift, nothing is left of the original mission or of Fort Bromhead, although the building built when the missionaries returned to the spot in the 1880s now serves as a church and a battlefield museum. Rorke's old road across the river fell into disuse with the advent of motor transport, and for half a century it was possible only to follow Chelmsford's route on horseback or on foot. In the last decade, however, a new road has been built with a concrete bridge spanning the Drift; the trenches of Fort Melvill can be explored on the rise immediately above the crossing on the old Natal side.

The base of Wood's northern column at Khambula is in good repair, apart from a wattle grove that straddles part of the main laager site. The ramparts of the redoubt have long since crumbled, but their traces can still easily be recognised. Most of the site is still open grassland, and Khambula remains one of the easiest battlefields of the war to interpret.

Many traces of the old 2nd Division and Flying Column forts still remain, particularly forts Newdigate, Marshall and Evelyn, although it is often necessary to hunt for them in the long grass. Many visitors today are surprised at how small they seem, and how flimsy, now that all that remains of them are a few shallow trenches and scattered stones which do little to convey the bustle of camp life that surrounded them when they were in use. Fort Nolela has benefited from work to pile up fallen stones and restore the walls to their original height.



The interior of 'Fort Mistake', a small redoubt built in 1881 – see the caption overleaf for a detailed description.

RIGHT AND PREVIOUS PAGE 'Fort Mistake', a small redoubt built in 1881 – after the Transvaal Rebellion – to command the road between Dundee and Newcastle. Although built after the Anglo-Zulu War, the fort is a fine example of what could be achieved using dry-stone building techniques, and incorporated many features which were to be found in the stone bastions and civilian laagers of the Zulu campaign, including a narrow and carefully screened doorway and rows of loopholes and firing steps. The site is popularly known as 'Fort Mistake' because of the supposed difficulty of holding it for a protracted period without access to water. However, like many Zululand forts it was probably only ever intended to serve as a temporary bastion during an attack.







Select bibliography

There is an extensive body of literature on the Anglo-Zulu War, although much of it is inevitably preoccupied with the warring sides and the main battles, and neglects the role of fortifications. The following is a select list of books that include material on military engineering during the war.

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Ian Knight, *The National Army Museum Book of the Zulu War* (London, 2003)

Ian Knight, *Nothing Remains But To Fight: The Defence of Rorke's Drift* (London 1993)

Ian Knight and Ian Castle, *The Zulu War: Then and Now* (London, 1993)

John Laband and Paul Thompson, *Kingdom and Colony at War* (Pietermaritzburg, 1990)

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John Laband and Paul Thompson, *The Illustrated Guide to the Anglo-Zulu War* (Pietermaritzburg, 2000)

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Howard Whitehouse, *A Widow-Making War: The Letters and Diaries of Major Warren Wynne RE* (Nuneaton, 1995)

Glossary

Banquette A raised step on the inside of a rampart, from which the defenders can fire on the enemy.

Bastion A stronghold that when linked together with other bastions forms an enclosure around a defended place.

Breach An opening made in the wall or rampart of a fortified place.

Caponier A covered passage across a ditch.

Chevaux-de-frise Large pieces of wood full of spikes, sword blades or long nails. These could be used to block up breaches and to prevent access to enemy troops.

Cordon A course of stones where the parapet meets the rampart.

Counterscarp The sloping edge of a ditch nearest to the besiegers.

Cunette A trench along the middle of a ditch, serving as an obstacle or a drain.

Curtain A wall that joins together two bastions.

Ditch A hollow channel made beyond the rampart, which extends all the way around the fortifcation. The edges of the ditch are made to slope, with the slope nearest the fortification called the scarp and the slope nearest the besiegers called the counterscarp.

Embrasure An opening made in a fortification through which guns or rifles are fired.

Fascine An object made of bundles of branches like faggots, some 6ft long and tied in two places. Used to strengthen or replace walls of trenches or other places.

Faussebraie An artificial mound or wall erected in front of the main rampart.

Gabion A kind of basket c.3ft high and usually of the same diameter, filled with earth.

Glacis The sloping ground immediately before the ditch, over which attacking forces would pass before descending into it.

Lunette A work placed on both sides of a ravelin to defend it; or, simply, a small fort.

Palisades Strong wooden stakes c.9ft long, driven into the ground, and usually covered, and situated about a yard from the parapet of the glacis.

Parallel A deep trench in which the troops working on the approaches to a fortified place can be supported.

Parapet A bank of earth raised upon the outer edge of a rampart. Used to protect the besieged and to give cover to the defenders to enable them to fire down into the ditch.

Rampart A masonry wall or a great bank of earth around a fortified place.

Ravelin A work placed in front of a curtain wall and used to cover the flanks of a bastion.

Retrenchment A fortification consisting of a trench and a parapet; usually, an inner line of defence within a large work.

Saps Trenches made under cover of gabions, fascines, etc. and pushed forward from the main parallel to establish batteries and other parallels.

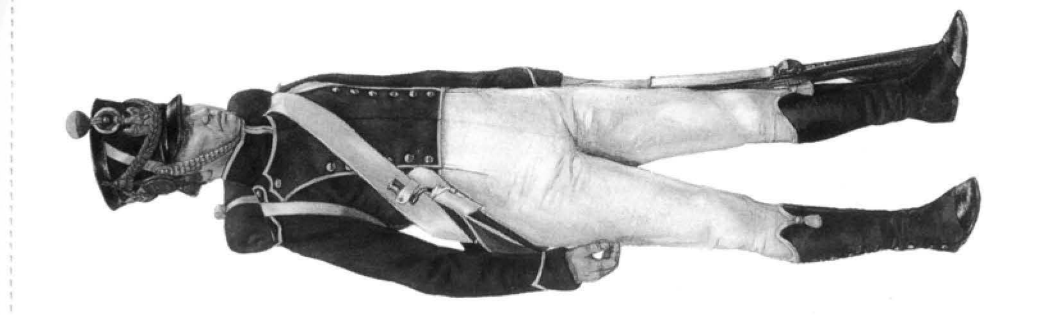
Scarp The sloping edge of a ditch nearest to the fortification.

Talus The sloping side of a wall or earthwork.

Terreplein A sloping bank of earth behind a parapet.

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Figures in bold refer to illustrations





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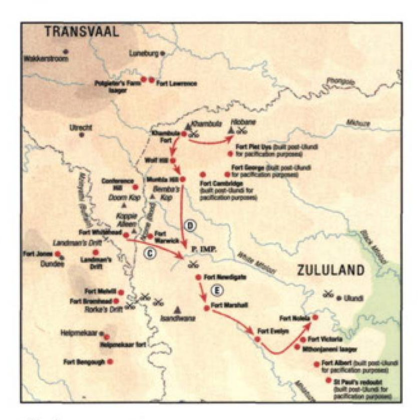
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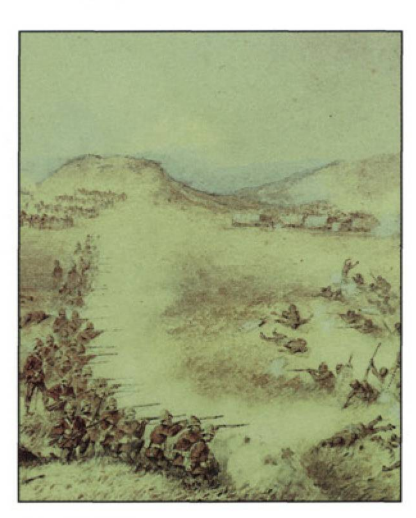
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